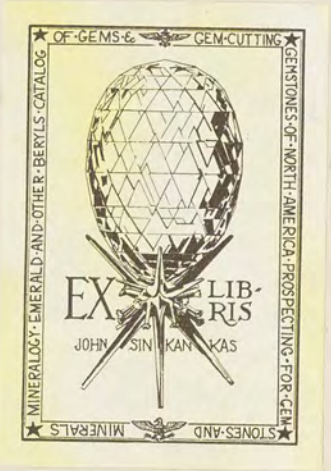
IWMoore



Modern Publications,

AND

NEW EDITIONS

OF

VALUABLE STANDARD WORKS,

PRINTED FOR

LONGMAN, HURST, REES, ORME, AND BROWN,

LONDON.

Periodical Publications and Fine Arts.

CHRONOLOGICAL and HISTORICAL ILLUSTRATIONS of the ANCIENT ARCHITECTURE of GREAT BRITAIN, containing a Series of Engravings, of Views, Plans, Elevations, Sections, and Details, of all the various Classes of Buildings and Styles of Architecture, that have successively prevailed at different Periods in Great Britain, accompanied by Historical and Descriptive Accounts of entire Edifices, and of their component Parts. By JOHN BRITTON, F.S.A. No. I. Price 12*s.* Medium 4to.; and 1*l.* Imperial 4to.

This Work will form the Fifth Volume of the Architectural Antiquities of Great Britain.

The ARCHITECTURAL ANTIQUITIES of GREAT BRITAIN, displaying a Series of Select Engravings, representing the most beautiful, curious, and interesting ancient Edifices of this Country, with an Historical and Descriptive Account of each Subject. By JOHN BRITTON.

In 4 Vols. Medium 4to. 21*l.*; or Imperial 4to. 32*l.* half-bound.

The CATHEDRAL ANTIQUITIES of ENGLAND; or, an Historical, Architectural, and Graphical Illustration of the English Cathedral Churches. By JOHN BRITTON, F. S. A.

Price 12*s.* per Number in Medium 4to.: and 1*l.* in Imperial 4to. Fifteen Numbers are already published. Each Size to class with the *Architectural Antiquities of Great Britain.* The first portion of the above Work contains a History and Illustration of Salisbury Cathedral, with 31 Engravings, medium 4to. 3*l.* 3*s.* imperial 4to. 5*l.* 5*s.* crown folio 8*l.* super-royal folio 11*l.* boards.—The 2d Portion comprises the Cathedral of Norwich, with 25 Plates. Medium 4to. Price 2*l.* 10*s.*; imperial 4to. 4*l.* 4*s.*; crown folio 6*l.* 10*s.*; super-royal folio 8*l.* 16*s.* Bds. The 3d Portion comprises Winchester Cathedral, medium 4to. 3*l.* 3*s.*; imperial 4to. 5*l.* 5*s.*; crown folio 8*l.*; super-royal folio 11*l.* Boards. The two latter sizes correspond with the new Edition of Dugdale's Monasticon.

Nos. I. II. and III. of York Cathedral are just published.

A PICTURESQUE VOYAGE ROUND GREAT BRITAIN; containing a Series of Views illustrative of the Character and prominent Features of the Coast. By WILLIAM DANIELL, A.R.A.

Vol. I. with 28 Plates, consists of a Voyage from the Land's End, Cornwall, to Holyhead. Imperial 4to. Price 7*l.* 10*s.* half-bound, Morocco back.—Vol. II. including 28 Plates, comprises a Voyage from Holyhead to Portpatrick, Price 7*l.* 10*s.* half-bound.—Vol. III. contains 42 Plates, and embraces the Western Highlands and Isles of Scotland, a district highly interesting in many Points of View, and peculiarly rich in Subjects for Graphic Illustration. Price 7*l.* 10*s.* half-bound.

The 1st No. of Vol. 4, will be published on the 1st of October.

EXCURSIONS through the COUNTIES of ESSEX, SUFFOLK, and NORFOLK; comprising brief Historical and Topographical Delineations of the City of Norwich, and every Town and Village; together with Descriptions of the Residences of the Nobility and Gentry, Remains of Antiquity, and every other most interesting Object of Curiosity. Forming a complete Guide for the Traveller and Tourist through the three Counties. Illustrated with *Three Hundred Engravings.* Each County will be complete in 12 Numbers, and form a distinct Work. To be comprised in Thirty-six Monthly Numbers, each to contain at least Eight Engravings and 36 Pages of Letter-press, Price 2*s.* 6*d.* 12mo.; or 4*s.* in 8vo. with Proof Impressions of the Plates.

Vol. I. of ESSEX, NORFOLK, and SUFFOLK, each containing Six Numbers and Forty-eight Views, with a Map of the Counties, are already published.

Arrangements are made to publish the other Counties of England, Scotland, and Ireland, on the same Plan.

The ANNUAL BIOGRAPHY and OBITUARY, with Silhouette Portraits.—Comprehending the Biography of all the principal Characters. Interspersed and illustrated with a Variety of original Letters, Documents, and Anecdotes; and under the Head of neglected Biography, is given a Variety of curious and genuine Anecdotes. Vol. I. Price 15*s.* Boards.

Vol. 2, for 1818, is just published, price 15s. boards.

The EDINBURGH REVIEW and CRITICAL JOURNAL, Nos. 1 to 59. Price 6*s.* each.

The BORDER ANTIQUITIES of ENGLAND and SCOTLAND; comprising Specimens of Architecture and Sculpture, and other Vestiges of former Ages. Accompanied by Descriptions. Together with Illustrations of remarkable Incidents in Border History and Tradition. By WALTER SCOTT, Esq.

In Two handsome Volumes, containing nearly ONE HUNDRED ENGRAVINGS, Price 9*l.* Medium Quarto; 13*l.* 13*s.* Imperial Quarto; or with India Paper Proofs of the Plates, 27*l.* Boards.

The BRITISH THEATRE; or, a COLLECTION of PLAYS, which are acted at the Theatres Royal, Drury-Lane, Covent-Garden, and Haymarket, printed under the Authority and by Permission of the Managers, from the Prompt-books, with Biographical and Critical Remarks. By Mrs. INCHBALD.

With elegant Engravings. In 25 Vols. royal 18mo. Price 6*l.* 15*s.* 6*d.*; or on fine Paper, with Portraits and Proof Impressions of the Plates, Price 13*l.* in Bds.

The MODERN THEATRE; or, a COLLECTION of SUCCESSFUL MODERN PLAYS, acted at the Theatres Royal, London. Printed from the Prompt-books by Authority of the Managers. Selected by Mrs. INCHBALD.

In 10 Vols. royal 18mo. to correspond with Inchbald's British Theatre, and Collection of Farces. Price 2*l.* 10*s.* and on fine Paper, Price 3*l.* 15*s.* Bds.

A COLLECTION of FARCES, and OTHER AFTERPIECES, which are acted at the Theatres Royal, Drury-Lane, Covent-Garden, and Haymarket. Printed under the Authority of the Managers from the Prompt Books. Selected by Mrs. INCHBALD. In 7 Vols. royal 18mo. Price 1*l.* 15*s.* Bds. or on fine Paper, with Portraits, Price 2*l.* 12*s.* 6*d.*

The EDINBURGH GAZETTEER; or, GEOGRAPHICAL DICTIONARY; comprising a complete Body of Geography, Physical, Political, Statistical, and Commercial.

Handsomely printed in 8vo. (double columns) and containing twenty-five Sheets of Letter-press. Parts I. II. and III. Price 9*s.* each.

To be completed in 12 Parts.

A NEW GENERAL ATLAS, constructed from the latest Authorities. By A. ARROWSMITH, Hydrographer to the Prince Regent.

Exhibiting not only the Boundaries and Divisions, but also the Chains of Mountains and other Geographical Features of all the known Countries in the World; comprehended in 53 Maps, from original Drawings, engraved in the best Style of the Art by SIDNEY HALL.

In Royal Quarto, Price 1*l.* 16*s.* half-bound, or with the Maps coloured, 2*l.* 12*s.* 6*d.*

The CIVIL ARCHITECTURE of VITRUVIUS, comprising those Books of the Author which relate to the Public and Private Edifices of the Ancients. Translated by WILLIAM WILKINS, jun. M. A. F. A. S. Fellow of Gonvil and Caius College, Cambridge, Member of the Society of Dilettanti, and Author of Antiquities of Magna Græcia. With Forty Engravings, by W. LOWRY. Complete in Two Parts. Price 6*l.* 6*s.* in Elephant 4to. or 12*l.* 12*s.* royal folio, Bds.

A SERIES of ENGRAVINGS to illustrate the Works, Days, and Theogony of HESIOD, from Compositions of JOHN FLAXMAN, R.A.P.S.

In Folio, Price 2*l.* 12*s.* 6*d.* Bds.

ILLUSTRATIONS of the ISLAND of STAFFA, in a Series of Views, accompanied by a Topographical and Geological Description. By WILLIAM DANIELL, A.R.A. Price 2*l.* half-bound.

Voyages, Travels, Geography, and Topography.

NARRATIVE of a JOURNEY in the INTERIOR of CHINA, and of a Voyage to and from that Country, in the Years 1816 and 1817; containing an Account of the most interesting Transactions of Lord Amherst's Embassy to the Court of Pekin, and Observations on the Countries which it visited. By CLARKE ABEL, F.L.S. and Member of the Geological Society, Chief Medical Officer and Naturalist to the Embassy. In 4to. illustrated by Maps and other Engravings. Price 3*l.* 3*s.* Bds.

A SECOND JOURNEY through PERSIA to CONSTANTINOPLE, between the Years 1810 and 1816. With a Journal of the Voyage by the BRAZILS and BOMBAY, to the PERSIAN GULPH; together with an Acccount of the Proceedings of his Majesty's Embassy under his Excellency Sir Gore Ousley, Bart. K.S.L. By JAMES MORIER, Esq. late his Majesty's Secretary of Embassy, and Minister Plenipotentiary to the Court of Persia. In royal 4to. with Maps, coloured Costumes, and other Engravings, from the Designs of the Author. *3l.* 13*s.* 6*d.* Bds.

A JOURNEY from INDIA to ENGLAND, through Persia, Georgia, Russia, Poland, and Prussia, in the Year 1817. By LIEUT.-COL. JOHNSON, C.B. In 4to. illustrated with numerous Engravings, Price *2l.* 2*s.* Bds.

TRAVELS through some PARTS of GERMANY, POLAND, MOLDAVIA and TURKEY. By ADAM NEALE, M.D. late Physician to the British Embassy at Constantinople, and Physician to the Forces. In 4to. illustrated by ELEVEN coloured Plates, price £2. 2*s.*

A NARRATIVE of the SHIPWRECK of the OSWEGO, on the Coast of South Barbary, and of the Sufferings of the Master and the Crew while in bondage among the Arabs; interspersed with numerous Remarks upon the Country and its Inhabitants, and the peculiar Perils of that Coast.
By JUDAH PADDOCK, her late Master.—In 4to. price *1l.* 5*s.* Bds.

MEMOIRS relating to EUROPEAN and ASIATIC TURKEY, and other Countries of the EAST. Edited from Manuscript Journals by ROBERT WALPOLE, A. M. The Second Edition. In Quarto. With Plates. Price *3l.* 3*s.* Bds.
This Work contains Manuscript Journals, and Remarks on Parts of Greece, Asia Minor, Syria, and Egypt, by late Travellers, and the Statistics, Antiquities, Natural History, and Geography of those Countries are elucidated by Drawings and Observations, which have never yet been before the Public.
A Second Volume is in the Press.

A DESCRIPTION of the PEOPLE of INDIA; with particular Reference to their Separation into Casts; and the various Singularities of Customs, Habits, and Observances, which distinguish them from all other Nations: taken from a diligent Observation and Study of the People, during a Residence of many Years amongst their various Tribes, in unrestrained Intercourse and Conformity with their Habits and Manner of Life. By the ABBE J. A. DUBOIS, Missionary in the Mysore. In One Volume, Quarto. Price *2l.* 2*s.* Bds.

TRAVELS in the IONIAN ISLES, in ALBANIA, THESSALY, and GREECE, in 1812 and 1813. Together with an Account of a Residence at Joannina, the Capital and Court of Ali Pasha; and with a more cursory Sketch of a Route through Attica, the Morea, &c. By HENRY HOLLAND, M.D. F.R.S. &c. &c. In 4to. illustrated by a Map and other Engravings, *3l.* 3*s.* Bds.

A JOURNEY to ROME and NAPLES, performed in 1817; Giving an Account of the present State of Society in Italy; and containing Observations on the FINE ARTS. By HENRY SASS, Student of the Royal Academy of Arts. In 1 vol. 8vo. Price 12*s.* Bds.

TRAVELS in CANADA and the UNITED STATES of AMERICA, in 1816 and 1817. By LIEUT. FRANCIS HALL, 14th Light Dragoons, H.P. late Military Secretary to General Wilson, Governor in Canada. In 8vo. Price 14*s.*

SPANISH AMERICA, or an HISTORICAL, DESCRIPTIVE, and GEOGRAPHICAL ACCOUNT of the DOMINIONS of SPAIN in the WESTERN HEMISPHERE, continental and insular. Illustrated by a Map of Spanish North America, and the West India Islands; a Map of Spanish South America, and an Engraving representing the comparative Altitudes of the Mountains in those Regions. By R. H. BONNYCASTLE, Captain in the Corps of Royal Engineers. In 2 Vols. 8vo. Price 1*l.* 1*s.* Bds.

An AUTUMN near the RHINE; or, Sketches of Courts, Society, and Scenery, in some of the German States bordering on the Rhine. 8vo. Price 14*s.*

TRAVELS in BRAZIL, during a Residence of Six Years in that Country. Illustrated by Plates of Costumes. By HENRY KOSTER.
Second Edit. in 2 Vols. 8vo. 1*l.* 4*s.* bds.

TRAVELS to discover the SOURCE of the NILE in the Years 1768, 1769, 1770, 1771, 1772, and 1773.
By JAMES BRUCE, of KINNAIRD, Esq. F.R.S.
The Third Edition, corrected and enlarged; to which is prefixed, the Life of the Author, by ALEXANDER MURRAY, D. D. Professor of Oriental Languages in the University of Edinburgh. In 7 vols. 8vo. with an eighth volume, in royal 4to. consisting of Engravings, chiefly by Heath, Price 6*l.* 6*s.* in Boards.

MODERN GEOGRAPHY. A Description of the Empires, Kingdoms, States, and Colonies; with the Oceans, Seas, and Isles, in all Parts of the World; including the most recent Discoveries and Political Alterations. Digested on a new Plan. By JOHN PINKERTON. The Astronomical Introduction by the Rev. S. Vince, A. M. F. R. S. and Plumian Professor of Astronomy, and Experimental Philosophy, in the University of Cambridge. With numerous Maps, drawn under the Direction, and with the latest Improvements of Arrowsmith, and engraved by Lowry. To the whole are added, a Catalogue of the best Maps and Books of Travels and Voyages, in all Languages; and an ample Index. A new Edition. In 2 vols. 4to. Price 5*l.* 5*s.* Bds.

A NEW MODERN ATLAS. By JOHN PINKERTON. The Maps are engraved in the Size called Colombier, from Drawings executed under Mr. Pinkerton's Eye; with all the Advantages afforded by the latest Improvements in Geographical Precision; and they exhibit the utmost Beauty the State of the Arts can admit. In 20 Numbers, each containing Three Maps. Price One Guinea.

The PERSONAL NARRATIVE of M. DE HUMBOLDT'S TRAVELS to the Equinoctial Regions of the New Continent: during the Years 1799-1804. Translated by HELEN MARIA WILLIAMS, under the immediate Inspection of the Author. Vol. 3, with Maps and Plates. Price 1*l.* 1*s.* Bds.

The First Two Volumes, Price 18*s.* Boards.

By the same Author,

The RESEARCHES, comprising the Text of the Atlas Pittoresque, and a Selection of the Plates, 2 Vols. 1*l.* 11*s.* 6*d.*

A POLITICAL ESSAY on the KINGDOM of NEW SPAIN, with Maps, in 4 Vols. 8vo. Price 3*l.* 9*s.* 6*d.* Bds.

A GENERAL COLLECTION of VOYAGES and TRAVELS; forming a complete History of the Origin and Progress of Discovery, by Sea and Land, from the earliest Ages to the present Time; to which is added, a Critical Catalogue of Books of Voyages and Travels; and an ample Index to the Work.

By JOHN PINKERTON, Author of Modern Geography, &c. &c.

With nearly 200 Engravings, in 17 vols. 4to. Price 37*l.* 16*s.* Boards.

JOURNAL of a RESIDENCE in INDIA. By MARIA GRAHAM. Second Edition. In 4to. Price 1*l.* 11*s.* 6*d.* in Boards, illustrated by Engravings.

LETTERS on INDIA. By MARIA GRAHAM, Author of a Journal of a Residence in India. With Plates. In 8vo. Price 14*s.* Boards.

A VISIT to PARIS in 1814. Being a Review of the Moral, Political, Intellectual, and Social Condition of the French Capital. By JOHN SCOTT. The 5th Edit. In 8vo. Price 12*s.* Bds.

PARIS REVISITED in 1815, by way of Brussels, including Observations on the late Military Events, and a View of the Capital of France when in the Occupation of the English and Prussian Troops. By JOHN SCOTT. The Third Edition. In 8vo. Price 12*s.* Boards.

An ACCOUNT of the KINGDOM of CAUBUL, and its Dependencies in Persia, Tartary, and India; comprising a View of the Afghaun Nation, and a History of the Dooraunee Monarchy. By the Hon. MOUNTSTUART ELPHINSTONE, of the Honourable East India Company's Service; Resident at the Court of Poona; and late Envoy to the King of Caubul. In 1 vol. 4to. illustrated by Two Maps and 14 Plates, 13 of which are coloured. Price 3*l.* 13*s.* 6*d.* boards.

TRAVELS in BELOOCHISTAN and SINDE; accompanied by a Geographical and Historical Account of those Countries. By LIEUTENANT HENRY POTTINGER, of the Honourable East India Company's Service; Assistant to the Resident at the Court of his Highness the Peishwa; and late Assistant and Surveyor with the Missions to Sinde and Persia. In 4to. with a large Map of the Country, &c. Price 2*l.* 5*s.* boards.

TRAVELS of ALI BEY, in Morocco, Tripoli, Cyprus, Egypt, Arabia, Syria, and Turkey, between the Years 1803 and 1807. WRITTEN BY HIMSELF. In 2 Volumes 4to. Illustrated by nearly One Hundred Maps and Plates. Price 6*l.* 6*s.* boards.

TRAVELS to the SOURCE of the MISSOURI RIVER, and across the American Continent to the Pacific Ocean. Performed by Order of the Government of the United States in the Years 1804, 1805, and 1806. By CAPTAINS LEWIS and CLARKE. Published from the Official Report, and illustrated by a Map of the Route, and other Maps. In 3 Vols. 8vo. 3d Edit. Price 2*l.* 2*s.* Boards.

"Not often does it fall to the lot of Reviewers to make a report on volumes of such interest as the present may boast."—*Monthly Review, July*, 1815.

History and Biography.

MEMOIRS of JOHN, DUKE of MARLBOROUGH; with his Original Correspondence, collected from the Family Records at Blenheim, and other authentic Sources. By WILLIAM COXE, M.A. F.R.S. F.S.A. Archdeacon of Wilts, and Rector of Bemerton. Vols. I. and II. in 4to. illustrated with Portraits, Maps, and Military Plans, Price 3*l.* 3*s.* each.

The Third Volume, which will complete the Work, will be published in November.

UNIVERSAL HISTORY, in Twenty-four Books. Translated from the German of JOHN MULLER. In 3 Vols. 8vo. Price 1*l.* 16*s.* Bds.

This Work is not a mere compendium of Universal History, but contains a Philosophical Inquiry into the Moral, and more especially the Political Causes which have given rise to the most important Revolutions in the History of the Human Race.

MEMOIRS of the COURT of QUEEN ELIZABETH. By LUCY AIKIN. In 2 vols. 8vo. with a Portrait from the rare Print by Crispin de Passe. The 2nd Edit. Price £1. 5*s.* boards.

The present Work is composed upon the Plan of uniting with the personal History of a celebrated female Sovereign, and a connected Narration of the Domestic Events of her Reign, a large Portion of Biographical Anecdote, private Memoir, and Traits illustrative of the Manners, Modes of Thinking, and Literature of an interesting Period of English History, original Letters, Speeches, and occasional Poems, are largely interspersed.

HISTORICAL SKETCHES of the SOUTH of INDIA. In an Attempt to trace the History of Mysoor. From the Origin of the Hindoo Government of that State, to the Extinction of the Mahommedan Dynasty in 1799; founded chiefly on Indian Authorities, collected by the Author while officiating for several Years as Political Resident at the Court of Mysoor. By COLONEL MARK WILKS. Complete in 3 Vols. Price 7*l.* half-bound, Russia backs, and lettered. Also may be had separate, Vols. II. and III. Price 4*l.* 4*s.* Boards.

"This instructive Work is entitled to much public attention, gratitude, and approbation. From documents hitherto unexplored, it brings into circulation many important facts concerning the History of Mysoor during the last two centuries." *Monthly Review.*

MEMOIRS of the late Mrs. **ELIZABETH HAMILTON**; with a Selection from her Correspondence, and other unpublished Writings. By Miss BENGER. In 2 vols. 8vo. with a Portrait after Raebairn, price 1*l.* 1*s.* bds.

LETTERS from the **ABBÉ EDGEWORTH** to his **FRIENDS**, written between the Years 1777 and 1807; with Memoirs of his Life, including some Account of the late Roman Catholic Bishop of Cork, Dr. Moylan, and Letters to him from the Right Hon. Edmund Burke, and other Persons of Distinction. By the Rev. THOMAS R. ENGLAND. In 8vo. Price 8*s.* boards.

The **HISTORY** of **BRAZIL**. By ROBERT SOUTHEY, Esq. Poet Laureate, Member of the Royal Spanish Academy. In 4to. Vol. I. Price 2*l.* 2*s.* and Vol. II. Price 2*l.* 10*s.* Bds. *The concluding Volume is in the Press.*

MEMOIRS of the **KINGS** of **SPAIN** of the **HOUSE** of **BOURBON**, from the Accession of Philip the Fifth to the Death of Charles the Third, 1700—1788. With an Introduction relative to the Government and State of Spain. Drawn from original Documents, and secret Papers, many of which have never before been published. By WILLIAM COXE, M.A. F.R.S. F.S.A.

The 2d edition. In 5 vols. 8vo. Price 3*l.* Boards. A few Copies in 3 vols. 4to. Price 6*l.* 6*s.* In Imperial 4to. 12*l.* 12*s.* Boards.

The **HISTORY** of **ENGLAND**, Vol. 1, from the Norman Conquest to the Accession of Edward the First. In 4to. Price 1*l.* 16*s.* boards. Vol. 2, containing the Reigns of Edward I. Edward II. Edward III. Richard II. Henry IV. and Henry V.—Also the History of Religion in England.—The History of English Poetry, and of the English Language and Prose Literature. By SHARON TURNER, F.S.A. In 4to. Price 2*l.* 2*s.* boards.

THE LIFE of **JAMES** the **SECOND**, **KING** of **ENGLAND**, &c. collected out of Memoirs writ of his own Hand, together with the King's Advice to his Son, and His Majesty's Will.

Published by command of his Royal Highness the Prince Regent, from the Original Stuart Manuscripts, which had been carefully preserved at Rome in the Family of the Pretender, and are now deposited in Carlton House.

By the Rev. J. S. CLARKE, LL.B. F.R.S.

Historiographer to the King, Chaplain to the Household, and Librarian to the Prince Regent. In 2 large Vols. 4to. Price 6*l.* 6*s.* in boards.

*** This Work comprises the History of Great Britain and France, from the latter Part of the Reign of Charles I. to the close of King William's Reign.

SPEECHES of the late Right Hon. **EDMUND BURKE**. In 4 Vols. 8vo. Price 2*l.* 16*s.*

FOX'S SPEECHES. In 6 Vols. 8vo. Price 4*l.* 4*s.* Boards.

WINDHAM'S SPEECHES. In 3 Vols. 8vo. Price 1*l.* 16*s.* Bds.

PITT'S SPEECHES. In 3 Vols. 8vo. Price 1*l.* 16*s.* Boards.

SPEECHES of the Right Hon. J. P. CURRAN, 8vo. Price 12*s.*

SPEECHES of CHARLES PHILLIPS, Esq. delivered at the Bar, and on various Public Occasions, in Ireland and England. In 1 Vol. 8vo. Price 7*s.* Bds.

This Volume is edited by Mr. Phillips himself, and is the only Publication of his Speeches authorized by him.

Medicine, Surgery, and Chemistry.

The LONDON DISPENSATORY; containing—1. Pharmacy—2. The Botanical Description, Natural History, Chemical Analysis, and Medicinal Properties, of the Substances of the Materia Medica—3. The Pharmaceutical Preparations and Compositions of the Pharmacopœias of the London, Edinburgh, and Dublin Colleges of Physicians. The whole forming a practical Synopsis of Materia Medica, Pharmacy, and Therapeutics: illustrated with many useful Tables and Copper-Plates of Pharmaceutical Apparatus. By ANTHONY TODD THOMSON, F.L.S. Member of the Royal College of Surgeons, and of the Medico-Chirurgical Society of London; and Fellow of the Medical, the Speculative, and the Royal Physical Societies of Edinburgh, and of the Société de Médicine de Marseilles.

In One large Volume 8vo. (revised and altered according to the last Edition of the London and Edinburgh Pharmacopœias), price 15*s.* Boards; the Second Edit.

**** This Edition contains the synonyma of the names of the articles, in the French, German, Italian, Spanish, and East Indian languages.

A SUCCINCT ACCOUNT of the CONTAGIOUS FEVER of this Country, as exemplified in the Epidemic now prevailing in London, with the appropriate Method of Treatment as practised in the House of Recovery, and pointing out the Means of Prevention. By THOMAS BATEMAN, M.D. F.L.S. Physician to the Public Dispensary, and Consulting Physician to the Fever Institution in London, &c. &c. In 8vo. Price 6*s.* Bds.

DIRECTIONS for the TREATMENT of PERSONS who have TAKEN POISON, and those in a State of apparent Death; together with the Means of detecting Poisons and Adulteration in Wine: also, of distinguishing Real from Apparent Death. By M. P. ORFILA. Translated from the French. By R. H. BLACK, Surgeon.—With an Appendix on Suspended Animation, and the Means of Prevention. In 12mo. price 5*s.* Boards.

CONVERSATIONS on CHEMISTRY. In which the Elements of that Science are familiarly explained and illustrated by Experiments. In 2 Vols. 12mo. with Plates by Lowry. The 5th Edition. Price 14*s.* Boards.

A PRACTICAL DICTIONARY of POPULAR MEDICINE, comprehending the different Branches of the Healing Art, so far as they relate to the Preservation of the Health of Man, &c. By RICHARD REECE, M. D. A new Edition, in 8vo. with Additions. Price 16*s.* Boards.

The MEDICAL GUIDE, for the Use of Families and Young Practitioners, or Students in Medicine and Surgery; being a complete System of modern and domestic Medicine; to which are added a Family Dispensatory, and a Copious Appendix; containing explicit Instructions for the ordinary Management of Children, and such Cases or Accidents which require immediate Aid, &c.

By RICHARD REECE, M. D. Fellow of the Royal College of Surgeons.

The Eleventh Edition. In 8vo. Price 10*s.* 6*d.* Boards.

DELINEATIONS of the CUTANEOUS DISEASES, comprised in the Classification of the late Dr. Willan; including the greater Part of the Engravings of that Author, in an improved State, and completing the Series as intended to have been finished by him. By T. BATEMAN, M.D. F.L.S. Physician to the Public Dispensary, and to the London House of Recovery.

In One Vol. 4to. with upwards of 70 coloured Plates, Price 12*l.* 12*s.* Bds.

The Series of New Engravings, representing those Diseases which should have been figured in the subsequent Parts of Dr. Willan's unfinished Work, may be had by the Possessors of that Work, separate, Price 7*l.* Bds.

An ESSAY on the DISORDERS of OLD AGE, and on the Means for prolonging Human Life. By ANTHONY CARLISLE, F.R.S. F.S.A. F.L.S. &c. &c. The 2d Edit. with several important Additions. In 8vo. Price 5*s.* Bds.

"Every stage of human life, except the last, is marked out by certain defined limits; old age alone has no precise and determinate boundary."—*Cicero on Old Age.*

An ESSAY on the Chemical History and Medical Treatment of Urinary Calculi. By ALEXANDER MARCET, M.D. F.R.S. one of the Physicians to Guy's Hospital. In Royal 8vo. with 10 Plates, comprising upwards of 20 Figures, many of which are beautifully coloured, Price 18*s.* Bds.

Divinity.

SERMONS. By the late Rev. WALTER BLAKE KIRWAN, Dean of Killala. With a Sketch of his Life. In 1 Vol. 8vo. With a Portrait of the Author. Price 12*s*. Boards.

The HISTORY OF ALL RELIGIONS, with Explanations of the Doctrines and Order of Worship, as held and practised by all the Denominations of professing Christians. By JOHN BELLAMY. The Second Edition, with considerable Alterations and Additions, in 12mo. Price 6*s*.; and in 8vo. fine paper, and hot-pressed. Price 10*s*. 6*d*. Bds.

RURAL PHILOSOPHY; or, Reflections on Knowledge, Virtue, and Happiness; chiefly in reference to a Life of Retirement in the Country. By ELY BATES, Esq. The 6th Edition. In 8vo. Price 9*s*. in Boards.

SCRIPTURAL ESSAYS, adapted to the Holidays of the Church of England: with Meditations on the prescribed Services. By Mrs. WEST, Author of Letters to a Young Man, &c. In 2 Vols. 12mo. Price 12*s*. Bds.

SERMONS, on the Nature, Office, and Character of Jesus Christ. By the Rev. T. BOWDLER, A.M. In 8vo. Price 14*s*. Bds.

Education.

THE CLASSICAL ENGLISH LETTER WRITER; or, EPISTOLARY SELECTIONS; designed to improve Young Persons in the Art of Letter Writing, and in the Principles of Virtue and Piety. With Introductory Rules and Observations on Epistolary Composition; and Biographical Notices of the Writers from whom the Letters are selected. In 12mo. Price 4*s*. 6*d*. Boards, or 5*s*. Bound.

LETTERS on ENGLISH HISTORY, from the Invasion of Julius Cæsar to the Battle of Waterloo; for the Use of Schools. By J. BIGLAND. In 12mo. Price 6*s*. Bds.

LETTERS on FRENCH HISTORY, from the Earliest Period to the Battle of Waterloo, and re-establishment of the House of Bourbon; for the Use of Schools. By J. BIGLAND. In 12mo. Price 6*s*. Boards.

An INTRODUCTION to the GEOGRAPHY of the NEW TESTAMENT; comprising a Summary Chronological and Geographical View of the Events recorded respecting the Ministry of our Saviour; principally designed for the Use of young Persons. By LANT CARPENTER, LL.D. In 12mo. with Maps. The 4th Edition. Price 4*s*. Boards.

An ABRIDGMENT of Mr. PINKERTON'S MODERN GEOGRAPHY; and Professor VINCE'S ASTRONOMICAL INTRODUCTION. In one large Vol. 8vo. with a Selection of the most useful Maps, accurately copied from those in the larger Work. The 4th Edition. Price 18*s*. Bound.

ROSE and EMILY; or, SKETCHES of YOUTH. By Mrs. ROBERTS, Author of Moral Views; or, the Telescope for Children. The 2d Edition. In 12mo. Price 5*s*. 6*d*. Bds.

AN INTRODUCTION to the STUDY of BOTANY. By J. E. SMITH, M.D. F.R.S. P.L.S. The 3d Edition. In 8vo. with 15 Plates, 14*s*. in boards, or, with the Plates coloured, Price 1*l*. 8*s*. Boards.

THE NEW PANTHEON; or, an Introduction to the Mythology of the Ancients, in Question and Answer. Compiled principally for the Use of Females. By W. JILLARD HORT. The 4th Edition, with Plates. Price 5*s*. in Boards.

"The new Pantheon is scrupulously delicate; it is also well arranged, and well written." *Eclec. Rev.*
"It would be unjust not to recommend this work as an elegant and useful companion to young persons of both sexes." *Gent. Mag.*

A COMPENDIUM of GEOGRAPHY, for the Use of Schools, Private Families, and those who study this necessary Science. By RICHMAL MANGNALL, Author of "Historical Questions." In 12mo. Price 9*s*. Bound.

HISTORICAL and MISCELLANEOUS QUESTIONS for the Use of Young People; with a Selection of British and General Biography, &c. By RICHMAL MANGNALL. The 14th Edition. In 12mo. Price 5*s*. Bound.

CONVERSATIONS on ALGEBRA; being an Introduction to the first Principles of that Science. Designed for those who have not the Advantage of a Tutor, as well as for the Use of Students in Schools. By WILLIAM COLE. In 12mo. Price 7*s*. Boards.

A CONCISE VIEW of the CONSTITUTION of ENGLAND. By GEORGE CUSTANCE. The 2d Edition, corrected and enlarged. In 8vo. Price 10*s.* 6*d.* in Boards.

"We most sincerely congratulate the Public on the appearance of a work which we can safely recommend as well fitted to supply a chasm in our system of public instruction."

A NEW TREATISE on the USE of the GLOBES; or, a Philosophical View of the Earth and Heavens; comprehending an Account of the Figure, Magnitude, and Motion of the Earth; with the natural Changes of its Surface, caused by Floods, Earthquakes, &c. designed for the Instruction of Youth. By THOMAS KEITH. In 12mo. Price 6*s.* in Boards.

TRAVELS at HOME, and VOYAGES by the FIRE-SIDE; for the Instruction and Entertainment of Young Persons.

Complete in 5 vols. 18mo. (including Europe, Asia, Africa, and America,) Price 15*s.* half-bound.

Vols. 3 to 5, containing Asia, Africa, and America, may be had separate, Price 9*s.* half-bound.

An EXPLANATORY PRONOUNCING DICTIONARY of the FRENCH LANGUAGE, in French and English, wherein the exact Sound and Articulation of every Syllable are distinctly marked. By L'ABBE TARDY, Late Master of Arts in the University of Paris. A new Edition, revised. In 12mo. Price 7*s.* Bound.

RULES for ENGLISH COMPOSITION; and particularly for THEMES; designed for the Use of Schools, and in Aid of Self-Instruction. By JOHN RIPPINGHAM. 2d Edit. In 12mo. Price 4*s.* in Boards.

THE ART of EXTEMPORE PUBLIC SPEAKING, including a Course of Discipline for obtaining the Faculties of Discrimination, Arrangement, and Oral Discussion; designed for the Use of Schools, and Self-Instruction. By JOHN RIPPINGHAM. 2d Edit. In 12mo. Price 6*s.* Boards.

A FAMILIAR INTRODUCTION to the ARTS and SCIENCES, for the Use of Schools and young Persons; containing a general Explication of the Fundamental Principles and Facts of the Sciences; divided into Lessons, with Questions subjoined to each, for the Examination of Pupils. By the Rev. J. JOYCE, Author of Scientific Dialogues, &c.

In one vol. 12mo. Price 6*s.* in Boards, illustrated with Copper-plates by Lowry, and Wood-cuts by Branston.

"We do not hesitate to recommend this as the most useful and satisfactory epitome of human knowledge, which has yet been published."—*Anti-Jacobin Review.*

RULES for PRONOUNCING and READING the FRENCH LANGUAGE. By the Rev. ISRAEL WORSLEY. In 12mo. Price 2*s.* Bound.

"This little volume, with a title so unassuming, has the rare merit of performing more than it promises. We hope that this little work will meet what it deserves, extensive approbation and adoption."—*Eclectic Review, Nov.* 1814.

A FRENCH DELECTUS; or, SENTENCES and PASSAGES, collected from the most esteemed FRENCH AUTHORS, designed to facilitate a Knowledge of the French Tongue. Arranged under the several Heads of the Parts of Speech, together with promiscuous Passages and Idioms. By the Rev. ISRAEL WORSLEY. In 12mo. Price 4*s.* Bound.

A SEQUEL to the POETICAL MONITOR; consisting of Pieces, Select and Original, adapted to improve the Minds and Manners of young Persons. By ELIZABETH HILL. 2d Edition. Price 3*s.* 6*d.* Bound.

A SEQUEL to the FRENCH EXERCISES of CHAMBAUD, HAMEL, PERRIN, Wanostrocht, and other Grammars; being a Practical Guide to Translate from English into good French, on a new Plan, with Grammatical Notes. By G. H. POPPLETON. In 12mo. Price 3*s.* Bound.

A KEY to POPPLETON'S FRENCH EXERCISES; being a Translation of the various Exercises contained in that Book. In 12mo. Price 2*s.* 6*d.* Bound.

Poetry.

LALLA ROOKH, an ORIENTAL ROMANCE. By THOMAS MOORE, Esq. Seventh Edition. In 8vo. Price 14*s.*

Also just published, in 8vo. Price 12*s.*

ILLUSTRATIONS of the POEM, engraved by Charles Heath, from Paintings by R. WESTALL, R. A.

*** A few of each may be had in Quarto.

The LORD of the ISLES, a Poem. By WALTER SCOTT, Esq. The 4th Edit. In 8vo. Price 14*s.*; and in royal 8vo. 1*l.* 8*s.* Boards.

The FUDGE FAMILY in PARIS, in a Series of Letters, from Phil. Fudge, Esq.—Miss Biddy Fudge—Mr. Bob Fudge, &c. Edited by THOMAS BROWN, the Younger, Author of the Two-Penny Post Bag. 8th Edit. In Foolscap 8vo. Price 7*s.* 6*d.* Boards.

ROKEBY. A Poem. In Six Cantos. By WALTER SCOTT, Esq. In 8vo. (the 6th Edition,) printed by Ballantyne, Price 14*s.* Boards, and in royal 8vo. Price 1*l.* 8*s.* Boards.

THE LADY of the LAKE. A Poem. In Six Cantos. By WALTER SCOTT, Esq. The 10th Edition. In 8vo. Price 14*s.* in Boards.

THE LAY of the LAST MINSTREL. A Poem, with Ballads and Lyrical Pieces. By WALTER SCOTT, Esq.
The 13th Edit. In 8vo. Price 10*s.* 6*d.* Bds.

BALLADS and LYRICAL PIECES. By WALTER SCOTT, Esq. The 4th Edition. In one vol. 8vo. Price 7*s.* 6*d.* in Boards.

The MINSTRELSY of the SCOTTISH BORDER; consisting of Historical and Romantic Ballads, collected in the Southern Counties of Scotland; with a few of a modern Date, founded on Local Tradition. With an Introduction and Notes, by the Editor. By WALTER SCOTT, Esq.
The 5th Edition. In 3 Vols. 8vo. Price 1*l.* 16*s.* Bds.

The DRAGON KNIGHT; a Poem, in Twelve Cantos. By SIR JAMES BLAND BURGESS, Bart. Elegantly printed in 1 Vol. 8vo. Price 12*s.* Boards.

RODERICK, the LAST of the GOTHS, a Tragic Poem. By ROBERT SOUTHEY, Esq. Poet Laureate, and Member of the Royal Spanish Academy. 4th Edition. In 2 Vols. foolscap 8vo. Price 16*s.* Bds.

JOAN of ARC. An Epic Poem. By ROBERT SOUTHEY. In 2 Vols. foolscap 8vo. The 4th Edit. Price 16*s.* in Bds.

MINOR POEMS. By ROBERT SOUTHEY. In 3 Vols. foolscap 8vo. Price 18*s.* in Bds.

THALABA the DESTROYER. A Metrical Romance, with copious Notes. By ROBERT SOUTHEY. The 3d Edition, in 2 Vols. foolscap 8vo. Price 16*s.* in Bds.

MADOC. A Poem. By ROBERT SOUTHEY. In 2 Vols. foolscap. The 3d Edition. Price 16*s.* in Bds.
A few Copies of the Quarto Edition may be had, 2*l.* 2*s.*

The CURSE of KEHAMA. A Poem. By ROBERT SOUTHEY. The 3d Edit. In 2 Vols. 12mo. Price 14*s.* in Bds.

The POET'S PILGRIMAGE to WATERLOO; by ROBERT SOUTHEY, Esq. In 12mo. the Second Edition, illustrated by Eight Engravings, Price 10*s.* 6*d.* Bds.

The LAY of the LAUREATE: CARMEN NUPTIALE. By ROBERT SOUTHEY, Esq. Poet Laureate. In foolscap 8vo. Price 4*s.* Bds.

The PLEASURES of HOPE, and other POEMS. By THOMAS CAMPBELL. With four Engravings, foolscap 8vo. Price 7*s.* Bds.

GERTRUDE of WYOMING, or the PENNSYLVANIAN COTTAGE, and other Poems. To which is added, an ODE to the MEMORY of BURNS. By THOMAS CAMPBELL.
In foolscap 8vo. the Sixth Edition, with a fine Engraving, Price 9*s.* Bds.

The WHITE DOE of RYLSTONE; or, the FATE of the NORTONS, a Poem. By WILLIAM WORDSWORTH. In 4to. Price 1*l.* 1*s.* Bds.

The EXCURSION, being a Portion of the RECLUSE. A POEM. By WILLIAM WORDSWORTH. In 4to. Price 2*l.* 2*s.* Boards.

POEMS, including LYRICAL BALLADS, and Miscellaneous Pieces, with Additions. By WILLIAM WORDSWORTH.
In 2 Vols. 8vo. Price 1*l.* 8*s.* Boards.

The WORLD BEFORE THE FLOOD, a Poem, in Ten Cantos. With other occasional Pieces. By JAMES MONTGOMERY. In foolscap 8vo. The 3d Edition. Price 9*s*. Boards.

The WANDERER of SWITZERLAND, and other Poems. By JAMES MONTGOMERY. The 6th Edit. In 1 Vol. foolscap 8vo. Price 6*s*. Bds.

The WEST INDIES, and OTHER POEMS. By JAMES MONTGOMERY. In one Vol. foolscap 8vo. Fourth Edition. Price 6*s*. in Boards.

PSYCHE; or, the LEGEND of LOVE: and other Poems. By the late Mrs. HENRY TIGHE. With a Portrait of the Author, engraved by Scriven. The 4th Edition, 8vo. Price 12*s*. in Boards.

BRIDAL of TRIERMAIN; or, the VALE of ST. JOHN: In Three Cantos. In 12mo. (the Fourth Edition) Price 7*s*. 6*d*. Bds.

"This Poem, which is ushered to the world in a form the most unassuming, is distinguished by excellencies of no ordinary rank."—*Quarterly Review, July*, 1813.

HAROLD the DAUNTLESS, a Poem in Six Cantos. By the Author of "The BRIDAL of TRIERMAIN;" to which Work it forms a Second Volume. In foolscap 8vo. Price 7*s*. 6*d*. Bds.

Novels, Romances, &c.

NEW TALES. By Mrs. OPIE. In 4 Vols. 12mo. Price 1*l*. 8*s*. Bds.

Contents:—Mrs. Arlington; or, all is not Gold that glitters.—Proposals of Marriage—White Lies—Henry Woodville—The Young Man of the World—A Tale of Trials—An Odd-tempered Man—The Ruffian Boy, a Tale founded on fact—The Welcome Home; or, the Ball.

ROB ROY. A Novel. By the AUTHOR of WAVERLEY, &c. In Three Volumes, 12mo. Price 1*l*. 4*s*.

The KNIGHT of St. JOHN. A Romance. By Miss ANNA MARIA PORTER, Author of the Recluse of Norway, &c. &c. &c. In 3 Vols. 12mo. Price 1*l*. 1*s*. Bds.

The PASTOR'S FIRE-SIDE. A Novel. By Miss JANE PORTER, Author of Thaddeus of Warsaw, Scottish Chiefs, &c. The 2d Edition, in 4 Vols. 12mo. Price 1*l*. 11*s*. 6*d*. Bds.

The WELSH MOUNTAINEER; a Novel. By CATHERINE HUTTON. In 3 Vols. 12mo. Price 16*s*. 6*d*. Bds.

The ANTIQUARY. A Novel. By the AUTHOR of "WAVERLEY, and GUY MANNERING." In 3 Vols. 12mo. a new Edition. Price 1*l*. 4*s*. Bds.

GUY MANNERING; or, the ASTROLOGER. By the AUTHOR of WAVERLEY. The 3d Edit. In 3 Vols. 12mo. Price 1*l*. 1*s*. Bds.

The BACHELOR and the MARRIED MAN; or, the EQUILIBRIUM of the "BALANCE of COMFORT," a Novel. The Second Edit. In 3 Vols. 12mo. 16*s*. 6*d*. Bds.

TALES of REAL LIFE. By Mrs. OPIE. In 3 vols. 12mo. The 3d Edition. Price 18*s*. in Bds.

DUTY, a Novel. By the late Mrs. ROBERTS, Author of "Rose and Emily." Interspersed with Poetry, and preceded by a Character of the Author. By Mrs. OPIE. In 3 Vols. 12mo. Price 12*s*. Boards.

VALENTINE'S EVE. A Novel. By Mrs. OPIE. In 3 Volumes, 12mo. Price 1*l*. 1*s*. Boards.

The SCOTTISH CHIEFS. A Romance. By Miss JANE PORTER, Author of "Thaddeus of Warsaw," and "Remarks on Sir Philip Sidney's Aphorisms." In 5 Vols. 12mo. The 3d Edition. Price 1*l*. 15*s*. Bds.

THADDEUS of WARSAW. A Novel. By Miss JANE PORTER. The 7th Edition. In 4 Vols. Price 18*s*. Bds.

"Thaddeus is a work of genius, and has nothing to fear at the candid bar of taste: he has to receive the precious meed of sympathy from every reader of unsophisticated sentiment and genuine feeling."—*Imp. Rev.*

"This work has more merit than can be ascribed to the crowd of productions of this class, and inculcates virtuous and magnanimous sentiments."—*Mon. Rev.*

The RECLUSE of NORWAY. By Miss ANNA MARIA PORTER. The 2d Edition. In 4 Vols. 12mo. Price 1*l*. 4*s*. Bds.

CORRECTION. A Novel. In 3 vols. 12mo. Price 1*l.* 1*s.* boards.

"The seducing images of luxury, of splendour, and of homages, of power and independence, are too seldom counteracted by the only preservative—a religious education. The world is too generally entered upon as a scene of pleasure instead of trial; as a theatre of amusement, not action."—*Hannah More.*

SKETCHES of CHARACTER; or, SPECIMENS of REAL LIFE. Three Vols. The 3d Edit. Price 15*s.* Bds.

VARIETIES of LIFE; or, CONDUCT and CONSEQUENCES. A Novel. By the AUTHOR of SKETCHES of CHARACTER. In 3 Vols. 12mo. Price 18*s.* Bds.

The HISTORY of FICTION; being a CRITICAL ACCOUNT of the most celebrated *Prose Works of Fiction*, from the earliest Greek Romances to the Novels of the present Age. By JOHN DUNLOP.
The Second Edition, enlarged. In 3 Vols. post 8vo. Price 2*l.* 2*s.* Bds.

The PHYSIOGNOMIST. A Novel. By the Author of "THE BACHELOR and the MARRIED MAN." In 3 Vols. 12mo. Price 16*s.* 6*d.* Bds.

SOPHIA; or, the DANGEROUS INDISCRETION.
A Tale founded on Facts. In 3 Vols. 12mo. Price 16*s.* 6*d.* Bds.

LIONEL; or, the LAST of the PEVENSEYS. A Novel.
In 3 Vols. 12mo. Price 1*l.* 1*s.* Bds.

Gardening, &c.

ELEMENTS of AGRICULTURAL CHEMISTRY, in a Course of Lectures for the Board of Agriculture. By Sir HUMPHRY DAVY, LL. D. F.R.S.L. and E. M.R.I. The 2d Edition. In 8vo. illustrated with 10 Engravings, by Lowry, Milton, and Scott. Price 18*s.* in Boards.

A TREATISE on the CULTURE and MANAGEMENT of FRUIT TREES, in which a new Method of Pruning and Training is fully described. To which is added, a new and improved Edition of "Observations on the Diseases, Defects, and Injuries, in all Kinds of Fruit and Forest Trees; with an Account of a particular Method of Cure." Published by Order of Government. By WILLIAM FORSYTH, F.A.S. and F.S.A. &c. The 5th Edit. Price 13*s.* Bds.

The GARDENER'S CALENDAR; or, Monthly Directory of Operations in every Branch of Horticulture. The 3d Edition. In one large vol. 8vo. Price 14*s.* Bds.

The VILLA GARDEN DIRECTORY; or, Monthly Index of Work to be done in Town and Villa Gardens, Parterres, &c. with Hints on the Treatment of Plants and Flowers kept in the Green Room, the Lobby, and the Drawing Room. By WALTER NICOL.
The 2d Edition, much improved. In foolscap 8vo. Price 7*s.* 6*d.*

HINTS ADDRESSED to PROPRIETORS of ORCHARDS, and to GROWERS of FRUIT in general. By WILLIAM SALISBURY.
In one Vol. 12mo. with Plates. Price 6*s.* Bds.

The BOTANIST'S COMPANION; or, an Introduction to the Knowledge of Practical Botany, and the Uses of Plants, either growing wild in Great Britain, or cultivated for the Purposes of Agriculture, Medicine, Rural Economy, or the Arts, on a new Plan. By WILLIAM SALISBURY.
In 2 Vols. 12mo. Price 12*s.* Bds.

COMPENDIUM FLORÆ BRITANNICÆ. Auctore JACOBO EDVARDO SMITH, EQU. AUR. M.D. Societatis Linnæanæ Præside, &c. &c.
The Second Edition, corrected, and continued to the End of the Third Volume of the FLORA BRITANNICA, with all new-discovered Plants from the ENGLISH BOTANY, and References to that Work throughout. In 12mo. Price 7*s.* 6*d.* Bds.

CONVERSATIONS on BOTANY, with Twenty Engravings.
The Second Edit. In One Vol. 12mo. Price 7*s.* 6*d.* plain, or 10*s.* 6*d.* coloured.
The object of this Work is to enable young persons to acquire a knowledge of the vegetable productions of their native country; for this purpose the arrangement of Linnæus is briefly explained, and a native plant of each class (with a few exceptions) is examined, and illustrated by an Engraving; and a short Account is added of some of the principal foreign species.

The CLASSES and ORDERS of the LINNÆAN SYSTEM of BOTANY. Illustrated by 240 Plates of Select Specimens of Foreign and Indigenous Plants. In 3 Vols. royal 8vo. Price 4*l.* 16*s.* or with coloured Plates, 7*l.* 4*s.* Bds.

Miscellaneous.

The FAMILY SHAKSPEARE; in which nothing is added to the Original Text: but those Words and Expressions are omitted which cannot with Propriety be read aloud in a Family. By THOMAS BOWDLER, Esq. F.R.S. and S.A. In 10 Vols. Royal 18mo. Price 3*l.* 3*s.* Bds.

"My great objects in this undertaking are to remove from the writings of Shakspeare, some defects which diminish their value, and, at the same time, to present to the public an edition of his plays, which the parent, the guardian, and the instructor of youth may place without fear in the hands of the pupil; and from which the pupil may derive instruction as well as pleasure; may improve his moral principles, while he refines his taste; and without incurring the danger of being hurt with any indelicacy of expression, may learn in the fate of Macbeth, that even a kingdom is dearly purchased, if virtue be the price of acquisition."—*Preface.*

An INTRODUCTION to ENTOMOLOGY: or, Elements of the Natural History of Insects. Illustrated by coloured Plates.

By WILLIAM KIRBY, M.A. F.R. & L.S. and WILLIAM SPENCE, Esq. F.L.S.

Vol. I. 3d Edition, enlarged and improved, Price 18*s.*—Vol. II. 2d Edition Price 18*s.*

This Work is intended as a general and popular history of Insects, and contains an account of the injuries they occasion, the benefits derived from them, the metamorphoses they undergo, their affection for their young, their various kinds of food, and the means by which they procure it, a description of their habitations, &c. &c.

SYSTEMATIC EDUCATION; or, ELEMENTARY INSTRUCTION in the various Departments of Literature and Science, with Practical Rules for studying each Branch of Useful Knowledge. By the Rev. W. SHEPHERD, the Rev. LANT CARPENTER, LL. D., and the Rev. J. JOYCE. Second Edit. In 2 vols. 8vo. illustrated with Plates by Lowry, &c. Price 1*l.* 11*s.* 6*d.* Bds.

FAMILIAR LECTURES on MORAL PHILOSOPHY. By JOHN PRIOR ESTLIN, LL.D. With a Memoir of his Life. In 2 Vols. 8vo. 18*s.* Bds.

RECREATIONS in MATHEMATICS, and NATURAL PHILOSOPHY.

First composed by M. OZANAM, of the Royal Academy of Sciences, &c. lately re-composed, and greatly enlarged, in a new Edition, by the celebrated M. MONTUCLA, and now translated into English, and improved with many Additions and Observations. By CHARLES HUTTON, LL. D. and F. R. S. &c. The Second Edition. In 4 Vols. 8vo. (with Plates) Price 3*l.* 3*s.* Bds.

CONVERSATIONS on POLITICAL ECONOMY; in which the Elements of that Science are familiarly explained. By the AUTHOR of "CONVERSATIONS on CHEMISTRY." The Second Edition, improved, in One large Vol. 12mo. Price 9*s.* Boards.

A SELECTION of CURIOUS ARTICLES from the GENTLEMAN'S MAGAZINE.

Containing,—1. Researches, Historical and Antiquarian—2. Ancient and Modern Literature, Criticism, and Philology—3. Philosophy and Natural History—4. Letters to and from eminent Persons—5. Miscellaneous Articles, including Anecdotes of extraordinary Persons, useful Projects and Inventions—6. Biographical Memoirs, Literary Anecdotes and Characters, Topographical Notices, &c.

By JOHN WALKER, LL.B. Fellow of New College, Oxford.

The 4th Edition. In 4 large Vols. 8vo. Price 2*l.* 12*s.* 6*d.*

A SYSTEM of MINERALOGY. By ROBERT JAMESON, Regius Professor of Natural History in the University of Edinburgh.

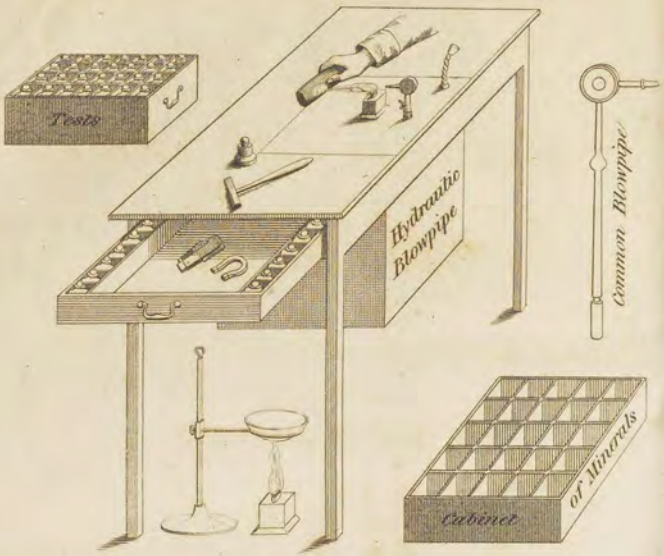
The *Second Edition*, with numerous Plates, illustrative of the various Crystallizations that occur in the Mineral Kingdom. In 3 large Volumes, 8vo. Price 2*l.* 12*s.* 6*d.* Boards.

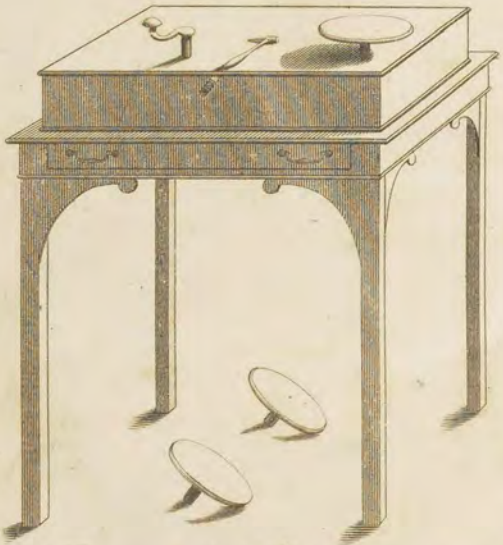
REMARKS on the ART of Making WINE, with Suggestions for the Application of its Principles to the Improvement of Domestic Wines.

By JOHN MACCULLOCH, M.D. The 2d Edit. in 12mo. Price 7*s.* Bds.

The NATURALIST'S POCKET-BOOK; or, TOURIST'S COMPANION, being a brief Introduction to the different Branches of Natural History, with approved Methods for collecting and preserving the various Productions of Nature. By GEORGE GRAVES, F.L.S. Author of British Ornithology, Ovarium Britannicum, and Editor of the New Edition of Curtis's Flora Londinensis.

In 8vo. with Plates, Price 14*s.* plain, or, 21*s.* coloured.





New invented Lapidaries apparatus for slitting & polishing Agates &c.

A NEW
DESCRIPTIVE CATALOGUE
OF
MINERALS,

CONSISTING OF

MORE VARIETIES THAN HERETOFORE PUBLISHED,

AND INTENDED FOR

The Use of Students,

WITH WHICH THEY MAY

ARRANGE THE SPECIMENS THEY COLLECT

BY J. MAWE,

Honorary Member of the Mineralogical Society of Jena; Member of the Royal Geological Society; First Administrator and Mineralogist to His Majesty the King of Portugal, Brazil, &c. &c.; Author of the Mineralogy of Derbyshire, Travels in South America, and through the Gold and Diamond Districts of Brazil, Treatise on Diamonds and Precious Stones, &c.

THIRD EDITION,

Entirely re-written, and generally following the System of Werner,

WITH AN

EXPLANATION OF PECULIAR PHRASES,

AND A

DESCRIPTION OF THE BLOW-PIPE AND LAPIDARIES' APPARATUS.

London:

PRINTED FOR AND SOLD BY THE AUTHOR,

149, *STRAND;*

AND LONGMAN, HURST, REES, ORME, AND BROWN,

PATERNOSTER-ROW.

1818.

BARNARD AND FARLEY,
Skinner-street, London.

PREFACE.

THE increased number of Collectors of Minerals since this Catalogue was first printed, has perhaps exceeded those of any other department of Natural History. We shall not be surprised at this circumstance, if we reflect, that—

THE VALUE OF EVERY SCIENCE MUST ULTIMATELY REST ON ITS UTILITY.

It is the utility of Mineralogy which the Author is desirous of establishing; he wishes to shew that its benefits arise in numberless shapes after the rough material is drawn from the mine.

In the following arrangement I have generally followed the system of Werner, as published by

Professor Jameson, from whose excellent elementary work I have freely taken such information as I required on the substances I was least acquainted with, and to whom I beg to return my thanks for having named my establishment; at the same time I regret that he is not more intimately acquainted with English Collections. I hope to be pardoned for referring to my own publications or private collection, in some cases; it being perhaps the easiest, if not the only mode of explanation.

The contents of this Catalogue are intended to explain the general characters of Minerals in the most concise manner, so that, on comparing it with the substances, a just idea of Mineralogy may be formed.

Minerals are our national strength and our riches: the plough could not work without Iron, or our manufactories without Coal. Nor is it more difficult to discriminate Granite from Limestone, than an Ash tree from an Oak. It daily occurs, that gentlemen, unacquainted with Mineralogy, whose studies, in other respects, have been liberal, bring Pyrites from a bed of Coal, thinking it may be Gold, and believe common Rock Crystal to be Diamond; nay, strange as it may appear, the owners of mines are frequently ignorant of

their produce, as if it were too trivial for their attention, or too difficult for their comprehension.

The owner of landed property ought not to be unacquainted with his subterraneous wealth, whether in Limestone, Clay, or veins of Metallic Substances; yet, if it were asked—of what are composed such tracts of country? how few would give a rational answer! The Alluvial Deposits produce Gold, Lead, Iron, Tin, Cobalt, &c. in our own country; in Brazil, the Diamonds and Gold are found in them, and in no other stratum.

To the merchant a general knowledge of Mineral productions would be very useful, as they are connected, directly or indirectly, with every branch of commerce. The different quality of Iron, made with Charcoal or Stonecoal, no one should be ignorant of; remittances have been often made in Gold-dust, mixed with brass filings; of Slag, for Copper; and Arsenic, for Cobalt.

The manufacturer, unacquainted with Mineralogy, labours under many disadvantages; as it is the foundation of all that is connected with metals and earths, which enter, in some shape or other, into almost all

our wants. What could we substitute for Iron or Lime? no one ought to be unacquainted that Iron, smelted with Charcoal, is much superior to that made with Pit-coal.

To those who travel, a knowledge of Mineralogy is absolutely necessary, and perhaps may become an indispensable requisite in the appointment of officers to be sent on expeditions; then we may have to boast of gaining information from their discoveries. Mica will not again be sent home as Silver; Pyrites for Gold; nor Pebbles for Diamonds.

Gentlemen and officers visiting new countries, fearful of losing an opportunity of becoming wealthy, have frequently committed these errors. India, Rio Plata, Brazil, &c. &c. bear testimony to such mistakes. Nor has it unfrequently happened, even of late years, that Tin has been bought for Silver, and rich ores employed for mending roads, or thrown aside, from ignorance of what they were.

Can any mind be so vacant or insensible as not to notice the correct forms which Minerals present? They are the geometry of nature, formed with mathematical exactness. Examine a piece of Calcareous

Spar; break it, every fragment is a rhomb; see a cube of Fluor, a hexagonal prism of Crystal, an octahedron of Diamond, of Iron, &c. or a dodecahedron of Garnet, and contemplate the laws by which these forms are produced, in the mysterious laboratory of nature, erected by the infinite power of the *Creator*.

The Author will have great pleasure in giving any information he may possess relative to Mineral Substances, or directing *Tourists* through the Mineralogical counties, freely offering introductions to those who will point out whatever is most worthy of observation, and assist them in obtaining the most interesting specimens.

☞ *To Ladies and Gentlemen who may wish to take Lessons, he will recommend the best Teachers.*

COLLECTIONS OF MINERALS,

AS FOLLOWS:

One Hundred small Varieties, described—*Two Guineas.*

One Hundred and Twenty, larger, arranged and described, with Catalogue—*Five Guineas.*

Two Hundred and Fifty, from—*Ten to Fifteen Guineas.*

COLLECTIONS

MORE NUMEROUS, AND SPECIMENS MORE SELECT, WITH A SUITE OF PRECIOUS STONES.

Three Hundred Varieties, from—*Twenty to Twenty-five Guineas.*

Four Hundred to Five Hundred, from—*Thirty to Sixty Guineas*—according as the Specimens are more or less select.

GEOLOGICAL COLLECTIONS.

Forty Specimens, named after Werner's System—*Two Guineas.*

Eighty, larger, including Varieties—*Five Guineas.*

SMALL BOXES, FITTED WITH CHEMICAL TESTS, HAMMERS, MAGNET, &c.

Ladies and Gentlemen, desirous of Mineral Substances, may have them sent for their Approbation.

EXPLANATION

OF THE

Blow-pipe.

THE Hydraulic Blow-pipe, figured in the plate, is of great use from the steady current of air it discharges, which gives sufficient heat in most cases for melting substances not very refractory. The stream of air may be continued with very trivial application of blowing down the tube, to keep the water at the most powerful elevation. There are many other mechanical blow-pipes, some of which are preferred to others; they are on the same principle of compressing air more or less, excepting the one into which oxygen and hydrogen is introduced, and may be said to be managed with peculiar adroitness, by Professor Clarke, of Cambridge.

The common blow-pipe, where it can be used with care for half an hour, is, in my opinion, the best instrument, and capable of producing the greatest heat with common air; much has been written about the management of it, although so easy to the practitioner; it is certain that more may be learnt in a few minutes practice than many pages could explain, for it depends on practice, and can only be learnt by application.

A great error is frequently made by applying too large bits to the flame, the blue point of which is extreme heat. Substances, as Lead Ore, should first be exposed to a more gentle heat, to drive off the sulphur; if not, it often decrepitates.

Charcoal is the best substance to place the Mineral to be melted upon; in it a small excavation may be made, or two pieces placed together, so as to answer the purpose of a reverberatory furnace.

With a small box, containing a few Chemical Tests, as the acids, and Borax as a flux, much may be done to satisfy the student on his first outset, and to prove what substances are; a magnet should be added to detect Iron, and a little steel mortar, so formed as to break and to preserve every particle of the result of the test; one experiment will lead to another, and the student will soon become master of the subject.

Blow-pipe Tests and Apparatus may be had at a trivial expence, from Forty Shillings to Five Guineas.

EXPLANATION

OF

Terms and peculiar Phrases.

AGGREGATE. Several substances adhering together.
AMORPHOUS. Without regular form.
BRITTLE. When the particles fly off in cutting or breaking.
CLEAVAGE. Is performed by splitting in the natural joints.
DECREPITATE. When heat is applied to some Minerals, as Fluor, it flies with a crackling noise.
DOUBLE REFRACTION. Is best seen in Calcareous Spar; a double image is produced.
FOLIATED. Leaf-like.
FRACTURE. Is a necessary character to observe with attention, as compact, foliated, earthy, conchoidal, &c.; it assists much in judging of Minerals, and can only be learnt by practice.
FRANGIBLE. Relates to the degree of force necessary to break or separate one piece from another with the hammer; thus, Calcareous Spar is fragile, and Emery or Basalt tough.
GLANCE. Shining.
GALENA. Lead Ore.
HARDNESS. This character is distinguished by the knife or file.
LAMELLAR. In thin plates.
MALLEABLE. As Gold and Copper; yields to the hammer; is soft.
NODULAR. Irregular globular substances.
PHOSPHORESCENCE. This character is produced by friction, also by throwing Fluor on hot coals.
PULVERULENT. In a state of powder or dust; loosely coherent.
SCOPEFORM FIBRES. Diverging from a common centre.
SECTILE. Between malleable and brittle.
SPECIFIC GRAVITY. Is the comparative weight of a substance compared with its bulk of water.
SPECULAR. Smooth; shining; mirror-like.
STELLATED. Diverging round; star-like.
TABULAR. Approaching flat.
VESICULAR. Full of holes or cavities; sponge-like.
VITREOUS. Glassy lustre; as if melted.

THE

LAPIDARIES' APPARATUS.

The rage for collecting Minerals has extended to Agates, rounded Stones, Jaspers, &c. gathered from the alluvial deposit, or beaten upon the shore by a violent surf, some of which are of exquisite beauty, containing great variety of dendritic, moss-like, &c. appearances.

That ladies might have polishing materials, on a small scale, instead of sending to the lapidary, or encumbering themselves with a large bench, this convenient and compact apparatus was invented, which may be brought into the parlour, where every operation of polishing on a scale sufficiently large may be effected, and pebbles may be slit of three or four inches diameter. It is also adapted for polishing shells, and consists of the following mills, which take off at pleasure, viz.

A Lead mill, to be used with Emery and water, for grinding down substances, preparatory to polishing.

A Pewter mill, to be used with Tripoli or Rotten-stone, a little wet, for polishing.

A Tin plate, properly prepared, the edge of which is to be used with Diamond powder (broken Diamonds), to slit or cut hard stones asunder.

Wood mills, covered with leather, &c. for polishing Marble, Alabaster, Shells, or soft substances.

This Apparatus may be had complete, from Four to Five Pounds.

CONTENTS.

APPENDIX.

ERRATA.

Page 67, 2 lines from the bottom, *for* Angite *read* Augite.
74, 6 lines from the bottom, *for* found *read* formed.

MAWE'S

Descriptive Catalogue.

NEW EDITION.

GOLD.

Sp. Gra. 17 *to* 19.

BEING the most precious metal and principal circulating medium, I have commenced this Catalogue with it.

GOLD. Its yellow colour is so well known as to need no description; it is pale or darker as it is more or less alloyed, and often tarnished (never found pure). It occurs foliated upon quartz, associated with other substances; but the immense quantity in circulation, is principally from the alluvial soil, where it is met with in large lumps *, also crystallized † and granular; in this state it continues to be found in Cornwall and Scotland, but the same formation in BRAZIL, is the great storehouse of this metal, where, within a small circuit, about twenty tons are annually produced by washing the soil.

Gold may be known from every other substance by being heavy, malleable, flexible, soft to the knife like lead; its colour not altering by heating or melting, nor affected by nitrous acid.

---

* Pieces have occurred in Brazil above thirty pounds weight. In Ireland a lump was found, twenty-two ounces.

† The finest crystals known are in Mrs. M's collection.

MASSIVE GOLD. In lumps more or less rounded, with or without quartz. Brazil.

Idem. Crystallized in determinate forms, as cubes, &c.; indeterminate, aggregated, or disseminated.

Idem. Foliated in leaves; surface smooth or crystallized in distinct or aggregated crystals.

Idem. Dendritic, arborescent; crystallized in distinct or aggregated prisms.

Idem. Moss-like; consisting of delicate fibres, crystallized, and interwoven. Hungary.

Idem. Granular. In coarse angular and blunted grains; sometimes crystallized, as washed from the soil.

Idem. Gold dust. What is obtained by the use of Mercury; too fine for separation by washing.

PLATINA.—*Sp. gra.* 23 *purified.*

Occurs in grains, rarely larger; its colour is dull Silver white; is found in the alluvial deposit, accompanied with Gold, Irridium, Palladium, and Iron. Melts with arsenic, and is soluble in nitro-muriatic acid.

PLATINA. In grains as washed from the soil. Mexico and Brazil.

IRIDIUM. In flat and shining foliated grains; extremely hard; is alloyed with Osmium.

PALLADIUM. In delicate scaly grains, of a lead blue colour; is soft; and alloyed with Platina.

BLACK ALLOY of Iridium, Iron, Rhodium, &c.

MERCURY.

Native Mercury—Native Amalgam—Muriate or Horn Mercury —Sulphurets, or Hepatic Ores of Mercury—Cinnabar.

Mercury volatilizes before the blow-pipe, and may be known from other ores that it may resemble, by its fumes silvering Gold or Copper, if held over it.

The Ores of Mercury may generally be known by their great weight. Mercury is always fluid in our atmosphere, but becomes solid by cold.

NATIVE MERCURY. Quicksilver occurs in globules; disseminated; colour, Silver white.

Idem. Fluid in Clay, or semi-indurated earthy substances.

Idem. Disseminated in coarse Sand-stone.

Idem. In Clay-slate, attended with Cinnabar.

Idem. Variety.

NATIVE AMALGAM. Semi-fluid; colour, white; is soft; membranous or delicate veins, or in small masses, filling cavities.

Idem. Crystallized in octahedrons.

Idem. In Garnet-formed dodecahedrons.

Idem. Variety.

SOLID AMALGAM. Is harder, and contains more Silver than the preceding variety.

HORN MERCURY. Colour, most like Gum Arabic; often lining cavities; is soft.

Idem. Crystallized in cubes, generally aggregated.

Idem. Variety.

This variety of Horn Mercury is very rare, and often attended with Quicksilver, Cinnabar, Pyrites, and Quartz.

SULPHURET OF MERCURY.

COMPACT CINNABAR. Is extremely heavy; colour, dull red; occurs massive.

Idem. Variety; fracture, fine grained; lustre, semi-metallic.

Idem. Superficial or disseminated.

Idem. Slaty; occurs massive and in concentric concretions; fresh fracture, shining.

Idem. Variety.

The greatest quantity of Mercury is distilled from the preceding Ores.

CINNABAR. Dark Red Cinnabar; colour, that of Cochineal; lustre, often approaching metallic.

Idem. Crystallized in hexagonal prisms.

Idem. Crystallized in rhombs, or variously modified.

BRIGHT RED CINNABAR. Colour, not so dark as the preceding. It occurs in rocks of Clay Slate, &c.

Idem. Variety.

Mercury occurs principally in Almaden, Deux-Ponts, Idra, Hungary, Siberia, Japan, Spanish South America, &c.

The uses of Mercury are well-known, particularly in the barometer, in medicine, &c.

SILVER.—*Sp. gra.* 10.

Its shining white colour is well known, but as it rarely occurs pure in its native state, it is subject to tarnish. It is found in Cornwall and Devonshire; is also extracted from the Lead of various mines; but the great formation of Silver is in South America. It occurs also in almost every part of the globe. Is easily fused by the blow-pipe, and rendered pure by re-melting with borax.

NATIVE SILVER. Massive, compact, crystallized; imbedded or in detached pieces.

Idem. Imbedded in calcareous spar; in prisms crossing each other in all directions, and serrated.

Idem. Foliated; leaf-like; composed of aggregated crystals; arborescent.

Idem. Branch-like; sometimes crystallized.

Idem. Fibrous; in long fibres, diminishing.

Idem. In delicate curls; filling nests; cotton-like.

Idem. Crystallized in three or four-sided long pyramids; sometimes canaliculate and serrated.

Idem. In delicate spongeous folia; disseminated in ocherous substances.

AURIFEROUS SILVER. Colour, yellowish white; contains Gold in various proportions.

ANTIMONIAL SILVER ORE. Colour, bright metallic white; occurs massive and crystallized in cubes; striated.

ARSENICAL SILVER. Is very heavy; has a silver white colour interspersed with a black powder; is brittle. Arsenic and Iron, 85 to 90, and Silver.

BISMUTHIC SILVER. Colour, Silver white, or tarnished; is a combination of Lead, Bismuth, and Silver.

HORN SILVER ORE. Massive and crystallized; in colour and fracture resembles gum arabic; is soft; indented by the nail; melts in the candle.

Idem. Pale yellowish green; crystallized in cubes, and disseminated in ochreous matter.

Idem. Occurs massive, and superficially coating Native Silver and other substances; colour dark brown or green.

Idem. Pale yellowish brown, in cubes or small veins; disseminated in ochreous substances.

Idem. Earthy: disseminated in calcareous and other substances; colour, pale green and white.

SULPHURETS OF SILVER.

SILVER combined with a small portion of Sulphur; malleable; flexible, soft to the knife, and easily melt with the blow-pipe.

COMPACT SILVER ORE. Colour, approaching black; occurs massive, foliated, in coarse fibres, coating quartz, and crystallized.

Idem. Crystallized in cubes, octahedrons, or indeterminate forms; flexible, soft, and malleable.

BLACK SILVER ORE. Has a scoriaceous sooty-like appearance; loosely coherent; occurs massive; and coating Native Silver.

The following Species contain larger Proportions of Sulphur, with Iron, which render them harder and brittle:

BRITTLE SILVER ORE. Occurs massive and crystallized; fresh fracture, bluish lead colour; it is generally tarnished darker.

Idem. Crystallized in flat six-sided prisms, and variously modified.

Idem. Aggregated in intermediate forms; superficially or massive.

Idem. Variety. General colour lead grey.

These are the most common Ores of Silver.

Red Silver Ore. Its colour is dark red, with semi-metallic lustre; it occurs crystallized and massive; sometimes irridescent.

Idem. Crystallized in six-sided prisms and pyramids; sometimes variously modified.

Light Red Silver Ore. Is massive and disseminated.

Idem. Crystallized in six-sided prisms, with or without pyramids, or modified.

These varieties contain about 60 Silver, 20 Antimony and Sulphur; they melt with the blow-pipe, and a Silver bead may be produced.

Carbonate of Silver. Colour, steel grey; metallic lustre, or when tarnished, iron black; effervesces with nitrous acid.

From the mines on the Mountain of Potosi, upwards of thirty millions of dollars were annually coined for several successive years. The quantity of Silver in various parts of Peru far surpasses the means they have of obtaining it; and the kingdom of Mexico is still richer in that metal; it is from thence the Silver is sent to Europe at the present time.

COPPER.

This metal is very generally found in Cornwall, in Chili, and almost all parts of the world; its colour and qualities are generally known. When alloyed with Zinc, it forms Brass and Bronze; it is commonly used as the alloy for Gold.

About two millions sterling of this metal is produced from the mines in Cornwall annually.

NATIVE COPPER. Bright or darker colour, as it is more or less tarnished; occurs massive, in large quantities.

Idem. Foliated in leaves, or branch-like.

Idem. Crystallized in octahedrons, cubes, prisms, or determinate forms.

Idem. Crystallized in indeterminate forms, aggregated.

Idem. Dendritic; moss-like; fibrous; interwoven.

Idem. Earthy; colour, dull copper brown.

SULPHURETS OF COPPER.

COPPER combined with Sulphur, and with or without small portions of Iron; is sectile, sometimes feebly malleable; is soft, heavy, and easily reduced by the blow-pipe.

COMPACT COPPER GLANCE. Colour, approaching Iron black; often tarnished; is massive.

Idem. Crystallized in six-sided prisms, sometimes so short as to appear like double pyramids; deeply or lightly truncated.

Idem. Aggregated; indeterminately crystallized; slightly malleable.

Idem. Foliated; often tarnished; steel blue. Cornwall.

MALLEABLE COPPER ORE. Colour said to be shining steel grey. Peculiar to Siberia.

YELLOW COPPER ORES.

Containing various portions of Sulphur and Iron.

VARIEGATED COPPER ORE. (Peacock Copper Ore, of the Cornish miners.) Colour, generally rich yellow, green, blue, &c.; occurs massive.

Idem. Crystallized in cubes, often twin Crystals; blistered, &c. Buntz Copper.

Idem. Idem. Variety.

COPPER PYRITES.

The poorest variety of Copper Ores; contains larger proportions of Sulphur and Iron than of Copper.

COPPER PYRITES. Colour, whitish yellow; is massive, hard and brittle.

Idem. Crystallized in cubes or octahedrons; variously modified.

Idem. Stalactitic; botroidal; mammillated.

Idem. Irridescent; crystallized; confusedly aggregated.

Idem. Variety, differing in colour, &c.

Idem. The poorest Ore of Copper, not yielding 10 per cent.

Copper Pyrites may be known from Iron by being softer, melting with the blow-pipe; and after solution in nitrous acid, coating iron, as the point of a knife touched with it.

ARSENICAL COPPER.

WHITE COPPER ORE. Colour, steel grey or tarnished black; fine, granular; melts with arsenical vapour.

GREY COPPER ORE. Colour, shining steel or lead grey; is massive and disseminated.

Idem. Crystallized in regular tetrahedrons; variously modified; generally accompanied with blende.

ANTIMONIAL GREY COPPER ORE. Colour, dark, often Iron black; occurs massive, &c.

Idem. Crystallized in perfect tetrahedrons, or variously modified; generally associated with Pyrites.—Antimony 20, Copper 30, with Sulphur and Iron.

PLATINIFEROUS COPPER ORE. Resembles Grey Copper. Contains Lead, Antimony, Iron, Silver, Platina, and Sulphur.

The following Black Copper Ores yield from 80 *to* 94 *per cent. Copper; in melting, sulphurous Vapours are exhaled. They are by some called* OXIDES *of Copper.*

BLACK COPPER ORE. Colour, approaching black; is massive; loosely cohesive; earthy; soft; and very heavy. By friction or pressure becomes compact.

Idem. In loose powder or cohesive; often coating Ores of Copper, or filling cavities.

RED COPPER ORES.

RED OXIDE OF COPPER; melts with the blow-pipe, and dissolves in nitrous acid.

COMPACT RED COPPER ORE. Is of various shades of red, with semi-metallic lustre; occurs massive, foliated, and disseminated.

Idem. Dark red, or reddish brown; crystallized in octahedrons; aggregated, or distinctly composed of minute octahedrons.

Idem. Colour, bright red; translucent, crystallized, foliated, and in perfect octahedrons, or modified.

Idem. Variety. Composed of aggregated crystals; foliated.

Idem. Red Copper; in octahedrons, covered with green carbonate.

Cubic Red Copper. This rare variety occurs in distinct cubes; sometimes aggregated; rarely modified.

Capillary Red Copper. In beautiful red capillary crystals, and delicate flakes or tables.

Idem. In fine straight delicate prisms, crossing each other at right angles; generally accompanying the cubic variety.

Idem. New variety; colour, orange or yellowish red; composed of delicate fibres, as if interwoven or compressed.

Idem. Earthy; disseminated in ochre; colour, dull red; is friable; accompanies Ores of Copper.

Compact Brick Red Copper Ore. Colour described by its name; occurs massive, and generally coated with a greenish white earth.

Idem. Colour, reddish brown; sometimes friable; scaly.

These two varieties contain a large portion of Iron; blacken before the blow-pipe, and melt with difficulty.

HYDRO-CARBONATES OF COPPER.

Effervesce with nitrous acid.

Earthy Blue Copper. Colour, blue of various shades; occurs massive or disseminated in earthy particles; often aggregated; globular, &c.

Azure Copper. Is of a deep blue colour; occurs massive; cellular; botroidal, and stalactitic.

Idem. Crystallized in solid rhombs; and variously modified.

Idem. Crystallized in tabular six-sided prisms, distinct or aggregated upon earthy Copper Ore, &c.

Idem. In delicate minute crystals; often associated with carbonate of Lead, Galena, &c.

VELVET COPPER ORE. In delicate spiculæ; coating Ores of Copper; and having a velvety appearance.

CARBONATES OR GREEN COPPERS.

Melt with a greenish flame, and are acted upon by nitrous acid.

FIBROUS MALACHITE. Colour, fine green; occurs acicular, in groups; diverging; and associates with other Ores of Copper.

Idem. Composed of aggregated fascicular crystals; approaching compact; fracture, diverging; stellular.

Idem. Crystallized in rhombic and six-sided prisms, with pyramids; sometimes variously modified.

Idem. Foliated in very small delicate light green four-sided tabular crystals; imbedded in malachite.

COMPACT MALACHITE. Colour, various shades of green; is massive, mammillated; fracture zoned; fibrous.

Idem. Crystallized in octohedrons, or dodecahedrons, detached or imbedded; sometimes having red copper for its nucleus. *New and very interesting.*

Idem. Variety of Malachite.

PITCH-LIKE COPPER ORE. Colour, brown; appearance, pitch-like; sometimes blackish and scoriaceous.

BROWN ANHYDROUS COPPER. Appears a deposit of a dark brown colour; containing Iron and Copper.

CRYSOCOLLA. Colour, bluish green, of different shades; often associated with Malachite, or coating ferruginous Ores of Copper.

SILICIOUS COPPER. Colour, emerald green, blackish green, and whitish green; occurs botroidal; scoriæ-like; glassy; composed of spheroidal coatings. *Appears nearly allied to the following:*

DIOPTASE. Colour, emerald green; dull or translucent; occurs in detached dodecahedrons, or in fragments. Copper oxide 55, Silica 30 to 40, and water.

MURIATE OF COPPER. Colour, dark green; occurs massive; composed of aggregated crystals.

Idem. Crystallized in slender four-sided prisms, with pyramids, and modified in groups.

Only found in South America.

Idem. Atacamite Arenaceous. Occurs in sand-like and crystallized grains of a green colour; is from the rivers near the mines of the preceding.

PHOSPHATE OF COPPER. Colour, dark or blackish green; occurs globular, massive, and disseminated; fracture diverging.

Idem. Foliated; its colour is lighter or darker shades of green; it occurs crystallized in elongated rhombs, and rhombic prisms.

Idem. Fibrous; colour as the preceding; occurs in concretions; fracture fibrous; diverging; shining.

COPPER COMBINED WITH ARSENICAL ACID.

Melts easily with the blow-pipe; emitting copious fumes of Arsenic.

OCTAHEDRAL ARSENIATE OF COPPER. Colours, sky blue and emerald green; occurs crystallized in flat octahedrons, and disseminated.

Idem. Variety. Emerald Green.

TABULATED ARSENIATE OF COPPER. Is of an emerald green colour; occurs in flat six-sided crystals, the sides alternately inclining to the plane.

TRIHEDRAL ARSENIATE OF COPPER. Occurs of a blackish shining blue; flat, as if compressed; often curved; aggregated; and is variously modified.

Idem. Prismatic, in rhombic prisms; with dihedral summits.

Idem. Variety.

FIBROUS ARSENIATE. In delicate crystals; aggregated.

Idem. Variety; capillary or fascicular.

Idem. Compact; hematitic; fracture silky, diverging; zoned; delicately fibrous; wood-like.

Idem. Variety; asbestos-like; approaching earthy.

Idem. Earthy; occurs in nests; is composed of particles of a whiting grey colour.

CUPREOUS ARSENIATE OF IRON. Colour, pale blue, greenish; occurs in minute rhombic crystals; aggregated; globular; generally upon cubic Arseniate of Iron.

The principal Copper Mines are situated in Cornwall, in Anglesea, and the Ecton mine, on the edge of Derbyshire. Copper is found in various other places of less note. Copper may always be detected by the blow-pipe, nitrous acid, and ammonia.

IRON.

This most useful metal is, by the wisdom of Providence, very generally distributed, in great abundance; it occurs in numerous varieties, which may generally be known either in their natural state, or after exposure to heat, to drive off the Sulphur, &c. by attracting the magnet.

TERRESTRIAL NATIVE IRON. Is said to have occurred massive, and in leaves of a grey colour; fracture that of steel; feebly malleable.

METEORIC NATIVE IRON. Exterior, rusty brown; cellular; containing Olivin; fracture granular, whitish; perfectly malleable. Siberia.

Idem. Coating earthy substances; of a dull dark brown scorified appearance; fracture earthy; interior, flakes of Native Iron, of a white colour.

These varieties are soft, malleable, strongly magnetic, and contain Nickel.

IRON PYRITES. Colour, various shades of yellow; is hard to the knife; brittle; occurs massive; compact, and disseminated.

Idem. Crystallized; indeterminately aggregated; shining.

Idem. In cubes, octahedrons, &c.; striated or smooth; detached or imbedded.

Idem. In distinct forms; imbedded.

Idem. Icosahedron or dodecahedron.

Idem. Aggregated crystals; tubiform; stalactitic.

Idem. Cellular; appearing as if formed upon Quartz, &c. which are decomposed.

Idem. Granular; fine or coarse grained.

Idem. Capillary; imbedded in calcareous spar, &c.

Idem. Radiated; diverging; composed of aggregated crystals, resembling the comb of a cock or clock-work; exterior often coated brown.

HEPATIC, LIVER PYRITES. Occurs globular, reniform, &c. outside brown; fracture pale and greenish yellow; stellular, diverging; is composed of aggregated crystals.

MAGNETIC PYRITES. Occurs imbedded; colour not unlike pinchbeck or tarnished Copper: it is massive and disseminated; has a granular appearance.

Idem. Foliated; said to occur crystallized in six-sided prisms.

The preceding varieties may be known from Copper Ores, by putting a few particles on a red-hot shovel, and submitting the residue to the magnet or to nitrous acid.

OXIDES OF IRON.

NATURAL LOADSTONE. Colour, approaching black, exterior sometimes brown; is massive, compact, and strongly magnetic.

EARTHY LOADSTONE. Colour, black, dull, and earthy; is probably a decomposition of the preceding.

MAGNETIC IRON ORE. Occurs massive; coarsely granular; of an Iron grey colour; attracts steel filings, and is a common Ore of Iron.

Idem. Crystallized in octahedrons.

Idem. Arenaceous; crystallized and granular.

IRON GLANCE. Is very general, and consists of several varieties; colour, commonly shining steel-grey; is massive, and crystallized.

Idem. Crystallized in double three-sided pyramids, or variously modified.

Idem. Variety.

Idem. Foliated in hexagonal tables; aggregated; sometimes beautifully grouped.

Idem. Specular in large folia; often imbedded in lava; splendent.

IRON MICA. Occurs in delicate brilliant six-sided tabular crystals; colour Iron grey; unctuous to the touch; is found with Quartz and Feldspar.

SCALY RED IRON ORE. Colour, brownish red; occurs coating red Hematites; is extremely light; soils whatever it is applied to.

RED OCHRE. Is friable; occurs with Hematites. Oxide of Iron with earthy matter.

COMPACT RED IRON GLANCE. Colour, Iron black and reddish brown; is massive; sometimes in supposititious crystals.

RED HEMATITES. Fracture fibrous; diverging; occurs in large masses; reniform, mammillated, &c.

BROWN IRON STONE. Is more or less compact; sometimes friable and scaly; glistening.

BROWN OCHRE. Earthy; soils the fingers; is soft, and appears a deposit.

COMPACT BROWN IRON ORE. Colour, various shades of brown; occurs coating ochreous Iron Ores.

BROWN HEMATITES. Is externally brownish black; fracture fibrous; silky; often zoned; occurs in the roofs and sides of caverns.

UMBER. Colour, yellowish and reddish brown; occurs massive, and is used for paint.

BLACK IRON ORE. Occurs massive, reniform, &c. in distinct concretions.

BLACK HEMATITES. Occurs massive and reniform; fracture delicately fibrous, with metallic lustre.

SPARRY IRON ORE. Colour, greyish and yellowish white; lenticular.

Idem. Brown sparry Iron Ore; rhombic.

Idem. Variety.

RED SPARRY IRON ORE. Composed of aggregated crystals, and coarsely granular.

Idem. Yellow, composed of aggregated crystals of calc spar.

REDDLE. Its colour is reddish brown; is massive and compact; greasy to the feel, and is used as chalk.

COLUMNAR CLAY IRON ORE. Occurs in distinct long prisms, straight or curved; colour, generally brown; is very friable.

LENTICULAR CLAY IRON STONE. Granular, aggregated, massive; reddish brown; lustre, semi-metallic.

JASPERY CLAY IRON STONE. Occurs brownish red, resembling Jasper.

CLAY IRON STONE. Colour brown, of various shades, dull and earthy; contains various portions of Iron; is the common ore of the coal countries.

Idem. Exhibiting vegetable impressions, as ferns, &c.

Idem. Resembling the stem of a plant.

Idem. Septaria. Clay and Oxide of Iron, with calcarious Spar. Used for making Roman cement.

Idem. Nodular; reniform; exhibiting various stages of decomposition; often one ball within another.

Idem. Shewing the passage of Greenstone, Basalt, &c. into Iron Ore.

SPHERICAL IRON ORE. Exterior smooth; colour, brown; enveloping sandy gravel; sometimes with Gold and Diamond. Brazil.

PEA IRON ORE. Occurs in pea-like forms; interior ochreous.

BOG IRON ORE. Is an earthy variety of a brownish or yellowish colour, more or less compact.

MEADOW IRON. Colour, approaching black; occurs massive, indurated, and earthy.

These varieties are formed by various deposits, therefore are composed of vegetable and animal debris.

PITCHY IRON ORE. Resembling the colour of pitch; occurs in crusts; shining, and soft.

PHOSPHATE OF IRON.

Occurs in rhombic prisms; striated, accuminated, and variously modified; of a green colour; is soft, like Selenite, and melts very easily with the blow-pipe.

FOLIATED. Colour, emerald green; occurs in rhombic prisms; accuminated, and variously modified.

Idem. Crystallized or disseminated; lustre, strongly metallic; separates in laminæ.

Idem. Colour, blue; occurs in four and eight-sided prisms; accuminated.

These interesting varieties are newly discovered in Cornwall.

Compact. Colour, Iron black; is massive.

EARTHY BLUE IRON ORE. Is pulverulent; colour, light

blue; occurs with Bog Iron Ore. Wood is often impregnated with it.

Idem. Compact. Occurs massive in North America, in beds, with other Ores of Iron; is used as paint.

CHROMATE OF IRON. Colours, black and bluish black; occurs massive; and is slightly magnetic.

Idem. Crystallized in octahedrons; gives a green flame with the blow-pipe, and colours borax green.

ARSENIATE OF IRON. Occurs in cubes; of an emerald colour, and various shades of green; generally small and aggregated; melts with arsenical fumes.

MANGANESE.

The oxide of this metal is very generally distributed, and in great variety. It is much used in the arts, particularly in bleaching, in making glass, and for oxygen gas.

FIBROUS GREY MANGANESE. Is crystallized in delicate acicular crystals; colour, dark; lustre, metallic.

Idem. Radiated; occurs stalactitic and crystallized, in prisms; dark metallic lustre; often tarnished, approaching black.

Idem. Foliated; colour, steel grey, migrating into black; massive and crystallized; fracture foliated.

Idem. Compact; colour dark, approaching black; occurs massive and botroidal; is soft.

EARTHY GREY MANGANESE. Blackish grey, dull, earthy; is used for oxygen gas; effervesces with acids.

Idem. Black, or approaching black; occurs in friable concretions; aggregated.

FOLIATED BLACK MANGANESE. Occurs massive, disseminated, and crystallized; in elongated octahedrons; imbedded.

Idem. Dendritic; occurs on the surface of Stone, in nests, and distributed on indurated marl.

WAD. Fibrous; brown, of various shades, very light; composed of fibres which intersect each other.

Idem. Ochreous; pulverulent; used as paint; frequently associated with other minerals, Black Wad.

Idem. Indurated; stalactitic; botroidal; colour, dark.

SULPHURET OF MANGANESE. Colour dark, approaching black; fracture metallic, shining; soon becomes tarnished; on melting gives sulphureous vapours, and tinges borax blue.

PHOSPHATE OF MANGANESE. Colour, shining black and brownish black; is hard; melts with the blow-pipe.

FOLIATED RED MANGANESE. Colour, rose red of various shades, and reddish white; composed of Magnesian Carbonate of Lime.

Idem. Compact; colour, purple and red, of various shades; is heavy; composed of Feldspar; coloured by Manganese.

FIBROUS RED MANGANESE. Composed of fibres; colour, reddish-brown; interwoven.

Manganese is found in great abundance in Devonshire, Cornwall, Derbyshire, and Scotland; often associates with Ores of Iron.

TITANIUM.

Is found in the state of Oxyde in various parts of the world. It occurs in alluvial deposits, like sand; also imbedded and crystallized.

MENACHINITE. Has a black sand-like appearance; lightly attracts the magnet; was found by Mr. Gregor, at Menachin, in Cornwall.

ISERINE. Colour as the preceding, or brownish black; occurs in larger and in grains more spherical than the preceding.

NIGRINE. Colour, approaching velvet black; occurs in rounded and angular grains; lustre, semi-metallic; is not attracted by the magnet.

BROWN SPHENE. Occurs imbedded in very oblique four-sided prisms, with dihedral terminations; wedge-shaped in every direction.

Idem. Colour, pale green variety; imbedded; crystallized as the preceding; rarely four-sided pyramids.

Idem. Foliated; colour greyish-green, shining; crystallized in oblique flat rhombs or double crystals canaliculated; blade-like.

SPINTHERE. Appears a variety of the preceding; forming irregular dodecahedrons.

RUTILE. Is red, or brownish red, with strong semi-metallic lustre; occurs massive in rhombic four-sided prisms; geniculated; striated lengthways, and variously modified; is heavy.

Idem. Imbedded in capillary hair-like crystals; often curved, and crossing each other in all directions; this occurs in great variety.

Idem. Distinctly crystallized either in groups, imbedded, or detached.

OCTAHEDRITE. Occurs in blue or party-coloured elongated octahedrons; often modified; generally associated with Adularia and Quartz.

CRAITONITE. Colour approaching black; crystallized in very acute rhomboids; is harder than octahedrite; does not scratch glass.

LEAD.

This is one of the most abundant of metals; it occurs in large and small veins in almost every rock formation; contains more or less Silver, and is combined with various substances; its uses are too generally known to need description. Melts easily with the blow-pipe.

GALENA. *Common Lead Ore.* Massive or in veins; foliated, &c.; colour, bright metallic.

Idem. Crystallized in cubes, or variously modified; detached or imbedded.

Idem. In octahedrons, distinct or aggregated; or variously modified.

Idem. Variety; shining; argentiferous; crystallized in octahedrons, and variously modified; containing a considerable portion of Silver.

Idem. Iridiscent; (Peacock Lead Ore of the miners.)

Idem. Composed of brilliant aggregated prisms; interwoven and indeterminately formed.

Idem. Steel grained or inclining to fibrous.

Idem. Foliated; fracture leaf-like.

Idem. Specular, as if plated; Slickenside.

BLUE LEAD ORE. Crystallized in hexagonal prisms; exterior rough *drusy;* from Huelgoit in France.

Idem. Pulverulent; often coating Galena, in Derbyshire.

ANTIMONIATED GALENA. Earthy; shining; tin white; crystallized, in aggregated crystals; contains a large portion of Antimony.

BOURNONITE.

TRIPLE SULPHURET OF LEAD. Colour, shining steel grey; crystallized in four-sided prisms; variously modified; composed of Lead, Antimony, and Copper. Discovered by Comte Bournon.

COBALTIC LEAD ORE. Colour, lead-grey; occurs in minute crystals, disseminated with Ores of Cobalt.

NATIVE MINIUM. *Doubtful.* Minium found with recomposed Galena; often occurs in old furnaces.

NATIVE OXIDE OF LEAD. It is said to have occurred in Wales, coating Galena; pulverulent; ash-grey.

CARBONATES OF LEAD; OR, SPARRY LEAD ORES.

Colours, various shades of white, more or less transparent; are subject to decripitate, but melt with the blow-pipe.

COMPACT CARBONATE. Colour, snow and cream white; shining; is commonly associated with Galena.

Idem. Semi-translucent; crystallized in double hexagonal pyramids, &c. on Galena.

Fibrous. In aggregated acicular crystals.

Idem. In three or four-sided prisms; sometimes canaliculated.

Idem. Covered with green or blue Copper Ore.

Idem. Colour, lead-grey, approaching metallic lustre.

EARTHY CARBONATE. Massive; colour, light-brown; heavy; fracture glistening.

Idem. Earthy variety; friable; brown, of various shades.

Idem. Variety; scaly or coarsely granular; cream white.

BLACK LEAD. Colour, bluish or greyish black; often coating White Lead Ore; appears a decomposition of Galena.

MURIATE OF LEAD. Colour, shining wine-yellow, lighter and darker; crystallizes in four-sided prisms with pyramids. Matlock.

PHOSPHATE OF LEAD. Massive; colour, green; very heavy.

Idem. Green; crystallized in six-sided prisms; aggregated.

Idem. In distinct crystals; disseminated.

Idem. Moss-like; aggregated; dendritic.

Idem. Earthy; friable; colour, dull, various shades of green.

Idem. Bright yellow; composed of minute crystals.

LEAD GOMME. Colour, shining yellow; gum-like; mammillated, one coat over another, as an onion.

BROWN PHOSPHATE OF LEAD. Crystallized in hexagonal prisms. From Brittany.

Idem. Fibrous; coating other substances, or in distinct concretions.

Idem. Crystallized in six-sided prisms; composed of acicular crystals; barrel formed.

ARSENIATE OF LEAD. Colour, yellow brown; in hexagonal crystals; sometimes aggregated; before the blow-pipe becomes fluid, and bursts with arsenical fumes.

Reniform Arseniate of Lead. Colour, reddish brown and ochre yellow; it occurs in laminar concretions.

Idem Filamentous. Is of a yellow and light-greenish yellow; appears not unlike asbest; it occurs in flakes and delicate filaments.

Idem. Earthy; probably a variety of the preceding in crusts; friable; and of a yellow colour. France.

Sulphate of Lead. Occurs imbedded; of yellowish grey, translucent, and crystallized in distinct cuneiform octahedrons. Anglesea.

Idem. Variety; variously modified; or aggregated and imbedded; in porous ferruginous matter.

Molybdate of Lead. Is yellow, and various shades of yellow; occurs in tabulated crystals and perfect octahedrons, or modified.

Idem. Variety; in regular octahedrons.

Red Lead. *Chromate of Lead.* Is massive; disseminated and crystallized in rhombic four-sided prisms, with pyramids, and modified. Siberia.

Idem. Variety; crystallized and variously modified.

Green Chromate of Lead. Is earthy and crystallized; usually associated with Red Lead and Manganese.

At the present low price of Lead, the Mines in England, Scotland, and Wales, yield only about one million sterling; they are principally situated in the following localities, viz.—In Northumberland, about Alston Moor; in the county of Durham; in the West-Riding of Yorkshire, near Grassington; at Matlock, and throughout the Peak of Derbyshire; in Devonshire, at Beer Alston; in Cornwall, Shropshire, and other counties. In Scotland, at Lead Hills, Wanlock Head, &c. In Wales, at the Halken mountain, and various other places.

The Ores in Devonshire and Cornwall are particularly rich in Silver.

ZINC.

The Ores of this metal are generally found with Lead, both in the oldest and newest formations, and are used with Copper for making Brass, &c. Pure Zinc is obtained by causing its vapours to pass through the bottom of the crucible into water.

Red Oxide of Zinc. Colour, red, tinged yellow or brownish; occurs disseminated in groups, indeterminately crystallized.

Electric Calamine. Occurs massive; of a dull grey colour; stalactitic and botroidal; often coating.

Idem. Crystallized in flat hexagonal prisms; forming roundish groups; becomes electric on being heated.

Calamine. Crystallized in tabulated crystals, generally four-sided and acute rhombs.

Idem. Fracture diverging; stellular; composed of delicate prisms.

Idem. Compact; is of various shades of colour, generally dull smoky grey or light brown.

Idem. Green Calamine. Colour, dull and pale green; compact.

Idem. Coating Calcareous Spar or Fluor, in supposititious crystals.

Idem. Earthy; loosely coherent; spongy.

Plumose or Cupreous Calamine. Consisting of delicate crystals; diverging; colour, green; forming round groups; fracture radiated.

Idem. Variety; greenish and silver white, in delicate plumose spiculæ.

BLENDE.

Sulphuret of Zinc, used for making harder brass, and is found accompanying almost every variety of metal; it occurs indeterminate, and rarely regularly crystallized; primitive form, tetrahedron.

Yellow Blende. Colour, resin yellow of various shades; occurs massive and crystallized in dodecahedrons, &c.; fracture, foliated.

Brown Blende. Colour, reddish brown; occurs massive and crystallized, in octahedrons, dodecahedrons, tetrahedrons, &c.; rarely distinct, generally aggregated and indeterminate.

Black Blende. Is shining, or dull black or bluish black; occurs Crystallized as Brown Blende; also aggregated and confused, rarely distinct.

Green Blende. Foliated, intermixed with Galena; fracture shining; greenish, with metallic lustre.

TIN.

This metal presents few varieties, it is by no means general, but where it has been discovered, it occurs in abundance.

Sulphuret of Tin. Is massive; lustre, glistening metallic; colour, approaching steel-grey, often called Bell-metal Ore. Peculiar to Cornwall.

Oxide of Tin. Massive, or in veins; colour, dark brownish black.

Idem. Crystallized in shining black four-sided prisms; with pyramids, and modified.

Idem. Aggregated crystals, indeterminate or twin crystals.

Idem. Crystallized; colour light, resin-like.

Idem. In detached crystals, broken from the matrix.

Idem. In delicate capillary crystals.

Idem. Disseminated in Granite.

WOOD TIN. Colour, various shades of brown; zoned; fibrous; wood-like; is extremely heavy.

Idem. Imbedded with Tin-stone, coating in mammillated concretions.

Idem. In round concretions, imbedded; fracture, stellular; colour, brown. Called in Cornwall, Toad Eye Tin.

These varieties may be known from Hematites by being much heavier. They are difficultly reduced by the blow-pipe; the finest piece ever seen I possessed, weighing 10½oz., from Mexico.

BISMUTH.

Is extremely easy of fusion, is used in making pewter solder, &c.; its oxide is variously employed.

NATIVE BISMUTH. Massive; fresh fracture generally presents a mixture of colours, resembling the plumage of a pigeon's neck.

Idem. Crystallized in octahedrons or long double three-sided pyramids, and tabulated; often striated.

SULPHURETED BISMUTH. Colour, approaching Tin; occurs massive and in delicate crystals, imbedded; melts in the candle.

NEEDLE ORE. Colour, metallic grey; is wire-like, im-

bedded in Quartz; often curved, and associated with Green Copper Ore and Gold.

Cupreous Bismuth Ore. Colour, Lead-grey, approaching Tin-white; is massive and disseminated. Contains *Copper*, *Bismuth*, and *Sulphur*.

Bismuth Ochre. Colour, yellowish grey and greenish; earthy and friable; is found with Native Bismuth and Ores of Cobalt.

TELLURIUM.

This metal has only been found in Transylvania; it contains Iron, Gold, and Lead. See Dr. Clarke's excellent account of these mines.

Native Tellurium. Colour, generally white, with metallic lustre; it occurs massive, fine grained, and disseminated; melts easily with the blow-pipe.

Graphic Tellurium. Colour, metallic grey, sometimes tarnished; occurs in delicate four and six-sided prisms; aggregated; interwoven, resembling a map or Arabic characters.

Yellow Tellurium. Colour, silver white, with a yellow tinge; occurs massive and crystallized.

Both these varieties contain above 20 per cent. of Gold.

Black Tellurium. Colour, approaching Iron black; occurs foliated and in tabular crystals; is soft; easily melts, and contains a portion of Lead.

ANTIMONY.

This metal is found in great abundance, and has very much the appearance of Galena, but is not so heavy; it is used for printing types, and in various metallic compositions. Melts in the flame of a candle.

NATIVE ANTIMONY. Colour, shining Tin white; fracture, granular and foliated; occurs massive, rarely distinctly crystallized. Is found in Dauphiny.

GREY ANTIMONY. Colour, that of Lead; is massive; fracture, granular; striated or compact; is soft.

Idem. Foliated; massive; splendant; broad foliated; yields easily to the knife.

Idem. Composed of oblique prisms; diverging; often piercing other substances, as Barytes, Quartz, &c.

Idem. In needle-like crystals, beautifully irridescent; parallel or diverging.

Idem. Capillary; approaching black. Lately found in Cornwall.

Idem. Plumose; composed of *down*-like fibres, in nests; interwoven, covering Quartz, &c.

NICKELIFEROUS ANTIMONIAL ORE. Colour, that of Steel or Lead; often tarnished; is harder than the preceding varieties, Antimony, Nickel, Lead, &c.

RED ANTIMONY. Occurs of a deep red, also tarnished purple colour; in delicate crystals, stellated.

TINDER ORE. A variety approaching earthy; of a reddish brown colour; matted; is friable.

WHITE ANTIMONY. Colour, white or yellowish white; occurs in four-sided flat crystals; easily melts.

Idem. Light grey; in delicate fibres; stellated.

ANTIMONY OCHRE. Colour, yellow of different shades; dull; often coating Grey Antimony.

MOLYBDENA.

Colour, shining, and like what is called black lead; occurs laminated; is flexible and crystallized in six-sided tables; leaves a greenish streak on porcelain, and is commonly imbedded in Quartz.

MOLYBDENA. Massive, disseminated, and foliated.

Idem. Crystallized in hexagonal plates.

MOLYBDENA OCHRE. Is of yellow colour, sometimes encrusting Molybdena; is very rare.

COBALT.

The ores of this metal are found in primitive and alluvial formations. Cobalt is of great use in the arts, forming zaffre or blue, with which porcelain, &c. is painted. Before the blow-pipe, gives strong arsenical vapours, and melts, colouring the borax deep blue. Is hard and brittle.

ARSENICAL COBALT. Fresh fracture is tin-white; when tarnished, blackish; is massive, and crystallized in cubes, octahedrons, and variously modified.

GREY COBALT. Colour, that of steel grey; tarnished blackish; occurs massive, and disseminated in curved lamellar concretions.

COBALT GLANCE. Is shining white, massive, dissemi-

nated, and crystallized in cubes, octahedrons, dodecahedrons, &c. in great variety.

SULPHURET OF COBALT. Is massive and disseminated; colour, pale steel grey; tarnished reddish; melts with sulphuric vapours.

BLACK COBALT ORE. Is composed of dull particles, loosely cohering; often with other Ores of Cobalt and Native Silver. Devonshire.

Idem. Indurated, generally dull bluish black; disseminated; coating and filling cavities; before the blow-pipe is strongly arsenical.

BROWN EARTHY COBALT OCHRE. Colour, dull blackish, brown, greenish, &c.; is a compound deposit.

Idem. Yellow Cobalt Ochre. Occurs massive and disseminated; appears a deposit, with ferruginous and arsenical substances.

EARTHY RED COBALT. Colour, reddish white, and peach red; occurs coating; velvety; is soft and friable.

RADIATED RED COBALT. Colour, shining peach red, lighter or darker; occurs stellular, in flat four-sided prisms; is a beautiful fossil.

SLAGGY RED COBALT. Colour, brownish red; occurs in crusts, with other Ores of Cobalt.

Cobalt is imported from Saxony and Sweden; the latter is esteemed the best. Great exertions have been made to purify the Ores of Cobalt, produced in Cornwall and Devonshire; but, after great expense, it has not answered the purpose.

The Crystals form a beautiful Suite, consisting of great variety. Foreign Cobalt pays a heavy duty, in order to encourage the use of that found in England.

NICKEL.

This metal is not of very general occurrence; it is used with Copper, and forms *Petit Or*. It is found in combination with meteoric Iron, and associates with Copper; melts with the blow-pipe; gives arsenical fumes.

NATIVE NICKEL. Occurs capillary, in long wire-like crystals, of a yellow brass colour, or tarnished.

COPPER NICKEL. Its colour is like bright tarnished Copper, but passes into greyish black; it is compact and heavy; melts with arsenical fumes.

BLACK ORE OF NICKEL. It is said to be an earthy substance, which gives an apple-green solution, with nitrous acid.

NICKEL OCHRE. Colour, apple-green, often coating Nickel; occurs earthy and in efflorescence; is supposed to be the colouring matter of Chrysoprase.

ARSENIC.

This metal is very generally diffused, combined with Sulphur and Iron; it may be known by the garlic-like smell it gives when under the action of the blow-pipe, or struck with a hammer.

NATIVE ARSENIC. Colour, approaching Tin white; lustre, bright metallic, granular, but soon becomes tarnished blackish; is very heavy.

ARSENICAL PYRITES. Is often irridescent; fracture, yellowish white; occurs massive, disseminated, and in aggregated crystals.

Idem. Crystallized distinctly in flat octahedrons, double four-sided pyramid; striated.

Idem. Argentiferous; colour, silver white or tarnished yellow; occurs imbedded, often in Lithomarge, in acicular four-sided prisms.

ORPIMENT.

REALGAR. Colour, scarlet and orange red; is friable; occurs massive and disseminated.

Idem. Crystallized in rhombic four-sided prisms, variously modified; melts in the flame of the candle.

YELLOW ORPIMENT. Colour, shining yellow; fracture, foliated and slaty; flexible; is soft.

OXYDE OF ARSENIC. Colour, white of various shades; occurs stalactitic, often in delicate flat crystals; incrusting.

Idem. Snow white, in silky filaments; earthy; incrusting other substances.

Idem. Earthy; dull greyish white; is friable.

PHARMACOLITE. Colour, generally reddish white; it occurs in very small *cotton-like* balls; fracture, stellular. *Arsenic acid* 50, *Lime* 25, *and water.*

TUNGSTEN.

This metal generally associates with Tin in primitive rocks; it is extremely heavy, massive, and compact; contains acid of Tungsten 60 to 70, *with Lime.*

TUNGSTEN. Colour, whitish and yellowish brown of various shades; occurs massive, and is very heavy.

Idem. Crystallized in octahedrons; detached or aggregated; coating other substances.

WOLFRAM. Occurs massive, of a black shining metallic hue; soon tarnishes. Tungsten acid 60 to 70, with Iron and Manganese.

Idem. Crystallized in four-sided tables, variously modified; generally imbedded; gives a red streak with the knife.

URANIUM.

The crystallized variety is of a beautiful emerald green colour, forming groups composed of four-sided tabular crystals, regularly aggregated, sometimes approaching octahedrons; difficultly melts with the blow-pipe

PITCH BLENDE. Colour, approaching black; occurs massive; is extremely heavy; yields to the knife. Oxide of Uran 80 to 90, with Lead and Iron.

URANITE. Colour, fine green; in four-sided tables, aggregated, and detached.

Idem. Variety; elegantly grouped, or more or less detached.

Idem. Variety; sometimes yellowish green.

URAN OCHRE. Colour, yellow, of various shades; associates with Pitch Ore, coating and disseminated.

Idem. Indurated; occurs massive in nodules; is soft, and breaks with a glimmering lustre.

TANTALIUM.

This genus contains a metal discovered by Mr. Hatchet twenty years ago, called *Columbite*, and has not, until now, occurred since that period.

TANTALITE. Colour, black; resembles Wolfram; occurs imbedded in striated fragments and crystallized; is very hard. *Contains Tantalium* 80 *to* 90, *Iron and Manganese.*

YTTROTANTALITE. Colour, black; occurs imbedded in oblique prisms, also in flat angular pieces; is very hard. *Columbite or Tantalium* 45, *with Yttria and Iron.*

GADOLINITE. Colour, velvet black; sometimes encrusted reddish brown; occurs imbedded in Granite; rarely crystallized. *Yttria* 60 *with Silica and Iron.*

CERIUM.

CERITE. Colour, reddish brown, pale, or deeper coloured; occurs massive and disseminated.

ALLANITE.

CERIUM OXIDE. Colour, brownish black; occurs massive and crystallized in four and six-sided prisms. *Oxide of Cerium* 34, *Iron* 25, *Silica* 35, *with Lime and Alumine.*

These specimens of Allanite and Cryolite were both obtained from a prize ship carried into Leith from Greenland.

METALLIC SALTS.

Have metallic bases, and easily dissolve in water.

SULPHATE OF IRON. Copperas; is green of various shades; crystallized in rhombs, octahedrons, and capillary; is formed by the efflorescence of Pyrites, &c.

SULPHATE OF COPPER. Blue vitriol; colour, blue and bluish green; is massive, stalactitic, and crystallized in rhombs variously modified.

SULPHATE OF ZINC. White Vitriol. Colour, greyish and greenish white; occurs stalactitic and crystallized in four-sided prisms and acicular.

SULPHATE OF COBALT. Is pale rose or flesh colour; occurs in crusts and granular; concrete; also efflorescent in white balls; with borax, affords a fine blue.

ARSENIATE OF COBALT. Is of a dull white and pale pink colour; occurs in an efflorescent state, coating black earthy ores of Cobalt; before the blow-pipe gives arsenical fumes, and colours Borax deep blue.

The student will find great assistance in the examination of metallic fragments with the blow-pipe. Borax, the Acids, a Magnet, Steel Mortar (to preserve, as well as to break, the result of the blow-pipe,) a few watch glasses, with a small hammer, forceps, and knife, will greatly facilitate his enquiries.

DIAMOND.

The general colour of Diamonds in the rough is pale grey, but some are brown and greenish. They often appear as if polished, though more commonly rough and crystallized in distinct forms, also indeterminate and round, but never in their real matrix, though sometimes enveloped in the soil which becomes indurated; they have, generally, a semi-metallic lustre; may be split in four directions; their hardness is beyond comparison, but they are fragile, easily broken, and consume with oxygen gas. Diamonds form the most beautiful and perfect series of crystallization.

See Sir A. Hume's work on Crystallized Diamond in his elegant collection.

DIAMOND. Octahedron, primitive form, or with planes on its edges.

Idem. Dodecahedron; rhomboidal.

Idem. Curvilinear.

Idem. Round, spheroidal, technically veiny.

Idem. Twin crystals; triangular; veiny; hemitrope.

Idem. Bort, only fit for glaziers, or for pounding for the use of engravers, lapidaries, &c.

Mr. Mawe was permitted to bring a few pounds weight of the earth in which the Diamond is found, from the Mines in Cerro do Frio, Brazil.

ZIRCON, JARGOON.

Contains a peculiar earth, called Zirconia, and has, when polished, somewhat the appearance of bad Diamonds.

ZIRCON. Colour various, generally grey and brown; it occurs crystallized in rectangular four-sided prisms, with pyramids; also rounded and in fragments.

Idem. Rounded more or less; found in the beds of rivers in Ceylon.

Idem. Variety.

HYACINTH. Colour commonly shining reddish brown; occurs in rounded and angular grains, also crystallized in four-sided prisms with pyramids.

Idem. Variety; generally imbedded.

RUBY FAMILY.

AUTOMALITE. Colour, dark green, approaching black; occurs imbedded in perfect octahedrons, in Talc.

CEYLONITE. Occurs in blunted angular grains; colour, dull bluish; is found in the beds of rivers in Ceylon, associated with Ruby.

Idem. Pleonaste. Colour, bluish black; occurs with the preceding, and crystallized in octahedrons, &c.

SALAM STONE. Colours, red and blue in the same specimen; occurs in grains and small crystals.

SPINELLANE. Occurs disseminated, and indeterminately crystallized; colour, muddy blue.

SPINEL. Colour, fine red; crystallized in octahedrons, &c.

Idem. Colour, pale red; in octahedrons, variously modified.

Idem. Crystallized in tetrahedrons, modified or rounded.

Idem. Macle; twin crystals or hemitrope.

ORIENTAL STONES.—SAPPHIRE.

Sp. gra. 4.08.

These are the hardest of the earthy substances, and next to the Diamond the most valuable. Sapphire is understood to be blue, which migrates into various shades, and is often party coloured.

SAPPHIRE. Colour, dark blue or party-coloured; crystallized in double six-sided pyramids.

Idem. Colour, pale bluish white or clouded; in hexagonal prisms, or double pyramids.

Idem. Variety; shewing the fracture.

Idem. GIRASOL. Opalescent.

Idem. ASTERIA. Reflecting a Chatoyant star of six rays.

The finest specimen of this beautiful variety the Author sold to Count Bournon, for the private collection of his Majesty Louis XVIII.

Idem. White or pale violet, or reddish white.

Idem. Chalcedonic Sapphire, bluish grey.

ORIENTAL RUBY. Red Sapphire. Colour, crimson red, bluish red, and pale red. Some varieties exceed the Diamond in value; is little known in Europe.

Idem. In hexagonal prisms or indistinctly crystallized.

Idem. Asteria, exhibiting a Chatoyant star of six rays.

ORIENTAL TOPAZ. Colour, wine yellow.

ORIENTAL AMETHYST. Colour, violet blue; very rare.

ORIENTAL EMERALD. Green Sapphire; extremely rare.

EMERY.

A substance nearly allied in chemical composition to the preceding and following varieties; it is, when reduced to powder, used for cutting facets in precious stones, also for polishing them.

EMERY. Colour, brown; occurs with Mica; is very compact, and difficult to break. Naxos.

CORUNDUM. Colour various, generally grey or greenish white; detached or imbedded.

Idem. Crystallized in six-sided prisms, or variously modified.

Idem. Imbedded; sometimes in Fibrolite.

Idem. Brown variety; crystallized in double six-sided pyramids.

Idem. Blue; foliated.

CHRYSOBERYL.

Colour, yellow green of different shades; occurs crystallized in four-sided prisms, and variously modified.

Idem. Amorphous; colour sometimes inclinable to reddish brown.

CYMOPHANE. The same as the preceding, with a moveable Chatoyant light.

These varieties are found with Diamonds in Brazil, and are nearly allied to Sapphire, containing above 80 Alumine.

SCHORL FAMILY.

Topaz—Schorlite—Pyrophysolite—Euclase—Emerald—Iolite—Schorl—Epidote—Zoisite—and Axinite.

Brazil Topaz. Colour, yellow of various shades; crystallized in rhombic prisms with pyramids, and variously modified; cross fracture, always foliated.

Idem. Colour, reddish yellow; crystallized as the preceding.

Idem. Pink Topaz. Sometimes part yellow and part pink; generally of a brownish tinge.

Idem. Blue Topaz. Rounded; rarely crystallized.

Idem. White Topaz. Transparent; crystallized in rhombic prism, or modified.

Idem. Rolled; rounded by attrition; fracture, foliated.

Saxon Topaz. Crystallized; imbedded or detached.

Pyrophysolite. Colour, greenish white; exterior dull; occurs in irregular prisms, imbedded in Quartz.

Euclase. Colour, Emerald green or pale green, bluish green, or blue; crystallizes in rhombic prisms, variously modified, is *very rare.* Brazil.

Idem. Euclase, in fragments. Rare.

Emerald. Colour, green; migrates into various shades of white; occurs in six-sided prisms, fragments, &c.

Idem. Pale green, rounded or polished.

Idem. Part green and part white; transparent.

Beryl. Colour, yellowish green, of various shades, sometimes blue; occurs in long six-sided prisms, striated, and sometimes with pyramids.

Aqua-Marine. Colour, sea green of various shades;

occurs crystallized, and longitudinally striated as the preceding.

Idem. Pale coloured, approaching white.

IOLITE DICHROITE. Colour, dull blue; when viewed in another direction is yellowish brown; it occurs crystallized in six-sided prisms.

PRECIOUS TOURMALINE. Colour, various; when green, approaching the Emerald; crystallizes in three and six-sided prisms, with pyramids, and variously modified; longitudinally striated.

Idem. Blue and blackish blue; occurs crystallized as the preceding, and variously modified.

Idem. RUBELITE. This beautiful Tourmaline is sometimes in the centre of large crystals, and surrounded by the blue and green varieties.

Idem. Cylindrical; Rubelite; imbedded in Quartz.

Idem. Wine yellow; this variety is very rare.

INDICOLITE. Dark blue; occurs crystallized as the preceding varieties.

COMMON TOURMALINE. Occurs of a fine shining black; crystallized in three-sided prisms and pyramids, and variously modified.

COMMON SCHORL. Occurs in acicular black crystals, distinct and aggregated, forming three-sided prisms; also compact and disseminated.

EPIDOTE. Pistazite. Colour, from blackish green to pale green; is crystallized in oblique four and six-sided prisms, with pyramids, and variously modified.

Idem. In aggregated acicular prisms, with pyramids.

Idem. Variety; crystallized or granular.

ZOISITE. Colour approaching smoke grey, with a pearl-like lustre; occurs in oblique prisms, rarely determinate; approaching fibrous.

Idem. Friable; colour said to be pale reddish white; lustre shining.

AXINITE. Colour, generally brown, with a violet tinge; occurs disseminated and crystallized in rhombic tables, variously modified, appearing like the edge of an axe.

Idem. Variety, disseminated.

GARNET FAMILY.

Leucite—Vesuvian—Grossular—Melanite—Allochrite—Colophonite—Aplome—Garnet—Granitite—Pyrope—Cinnamon Stone.

LEUCITE. Colour, greyish white; occurs imbedded, granular, and crystallized in double eight-sided pyramids; accuminated with four-sided pyramids, forming a spheroid of 24 trapeziums.

Idem. Detached; perfectly crystallized or in granular concretions.

VESUVIAN. Colour, resin brown; lustre, shining; is crystallized in four-sided prisms, with four-sided pyramids, or modified; generally associated with Mica, Schorl, and Garnets.

GROSSULAR. Colour, yellowish green; crystallizes in smooth dodecahedrons.

Idem. Colour as preceding; crystallized in the form of Leucite; sometimes modified.

MELANITE. Black Garnet; crystallized in dodecahedrons; imbedded or detached.

Idem. Variety, with planes on the edges of the rhombs.

ALLOCHRITE. Colour, yellowish grey and greenish;

occurs massive; has a resin-like lustre; gives fire with steel; and melts with the blow-pipe.

COLOPHONITE. Colour and lustre resembling resin; occurs crystallized in dodecahedrons, and in aggregated concretions; is not so heavy as Garnet.

APLOME. Colour, bluish green and deep brown; occurs in rhombic dodecahedrons, with the planes striated.

PRECIOUS GARNET. Colour, blackish and bluish red; occurs crystallized in rhomboidal dodecahedrons.

Idem. Variety; in detached crystals.

Idem. Crystallized as the Leucite, having twenty-four planes (trapeziums); melts before the blow-pipe.

COMMON GARNET. Colour, brown, of various shades; it occurs massive and in large dodecahedrons.

Idem. Fragment or variety; easily melts with the blow-pipe; is magnetic after being heated.

GRENATITE. Colour, dark brown; occurs in oblique four-sided prisms.

Idem. Twin crystal, macled or cross crystal.

PYROPE. Colour, dark cherry red; occurs in rounded and angular concretions.

CINNAMON STONE. Colour, brownish and yellowish red; lustre resinous; has a coarse granular appearance.

Contains Silica, Alumine, and Lime, with a small portion of Iron.

The Garnet Family forms a beautiful suite, and is finely crystallized. The Brown variety is melted in Bohemia as an Ore of Iron.

Garnets, when cut and polished, are well known as ornaments; they have never lost their estimation, being the only jewels worn with mourning.

QUARTZ FAMILY.

Quartz is almost pure Silica; fine pellucid crystals are often called Diamonds, as Cornish Diamonds, &c. It occurs of various colours and of various forms, generally in six-sided prisms, with six-sided pyramids; also flexible, cellular, rhombic, granular, in tuffa, &c.

PRECIOUS AMETHYST. Colour, that of violet; occurs massive, and crystallized in six-sided prisms.

COMMON AMETHYST. Is of various shades of violet; spotted, disseminated, or veined.

FIBROUS AMETHYST. Colour as the preceding; composed of aggregated prisms.

ROCK CRYSTAL. Pellucid white; occurs massive, crystallized, and variously modified.

Idem. In six-sided prisms.

Idem. In prisms, with double pyramids.

Idem. Variety; modified.

Idem. Irridescent; shewing prismatic colours.

QUARTZ. Imbedded in small rhombic crystals, primitive form. Cornwall.

COMMON QUARTZ. Crystallized in six-sided prisms.

Idem. Six-sided pyramids; aggregated.

Idem. Dodecahedron, double six-sided pyramids.

Idem. Fibrous; diverging.

Idem. Massive; Common Amorphous.

Idem. Smoky crystal; singularly crystallized.

BLUE QUARTZ. Sappharine.

RED QUARTZ. Hyacinth of Compostella.

ROSE QUARTZ. Colour; red and white red.

YELLOW QUARTZ. Topazine Crystal. Cairn Gorum.

MILK QUARTZ. Very pale bluish pink. Hyaline.

Idem. Pink; crystallized in six-sided prisms.

PAPER QUARTZ. In leaves; foliated; packley.

RHOMBIC QUARTZ. Fontainbleau sandstone.

FLOAT QUARTZ. Cellular; (sponge-like); floats on water.

FLEXIBLE SANDSTONE. Quartz and Mica. Brazil.

Idem. Variety; flexible in water, nearly pure Silica. China.

AVENTURINE. Colour, red brown; with Yellow Mica.

QUARTZ. Containing foreign substances, as Chlorite, Actinolite, Titanium, &c.

Idem. Variety.

SUPPOSITITIOUS CRYSTALS. Cube; octahedron; rhomb, &c.; often hollow.

PRASE. Colour, dark and dull green; occurs massive; and crystallized as Quartz.

CAT'S EYE. Is generally light grey, or greenish grey; has a peculiar Chatoyance or floating light.

FERRUGINOUS QUARTZ. Is yellow; composed of aggregated small crystals, with three-sided pyramids.

Idem. Reddish, or brownish, or blackish.

SPLINTERY HORNSTONE. Occurs of various colours, commonly grey, or greenish; is massive.

Idem. Variety. Pseudo Crystals, as the cube, rhomb, &c.

Idem. Grey, sometimes red or green; occurs massive; fine texture; and conchoidal.

Idem. Chert; petrifaction; used in the potteries.

WOODSTONE. Colour, various; generally brown, striped; having the appearance of wood; petrified wood.

FLINTY SLATE. Colour, dull smoke-grey; stratified; not difficult to break. Derbyshire.

LYDIAN STONE. Colour, black; generally with Quartz; veins fracture fine; used for touch-stone.

FLINT. This substance is generally known; and is of various colours.

CHALCEDONY.

BLUE CHALCEDONY. Crystallized in cubes.

COMMON CHALCEDONY. General colour, grey and bluish grey.

Idem. Stalactitic or mammilated.

Idem. Stratified.

Idem. In pseudo crystals.

Idem. Blue amorphous.

MOCHA STONE. With tree and branch-like appearance.

Idem. Red; variety; dendritic, &c.

ORIENTAL ONYX. Colour, deep reddish brown; with white or grey veins of Chalcedony.

SARD ONYX. The colour of the preceding, lighter or darker, without the white vein; generally clouded.

CRYSOPRASE. Colour, apple green, of various shades.

PLASMA. Colour, green, rather dull, often with spots of white or yellow, darker than the preceding.

CORNELIAN. Colour, generally red, of various shades; also yellowish and striped.

Idem. Composed of layers; reddish and white.

Idem. Rough, mammillated.

HELIOTROPE. Bloodstone Jasper. Colour, dark green, spotted red; extremely compact.

Idem. Variety; spotted yellow; semi-transparent.

SILICIOUS TUFFA. Contain stems and leaves of plants encrusted. From the hot water springs, Iceland; is extremely light.

FIORITE PEARL SINTER. Colour, generally greyish white; occurs stalactitic and botroidal. From Iceland.

HYALITE. Occurs, superficially, not unlike Chalcedony, resembling Gum Arabic, upon decomposed Basalt or porous Wacke.

OPAL.

PRECIOUS OPAL. Transparent, or milk-white; exhibits various Chatoyant beautiful colours.

Idem. Variety; detached, or in the matrix disseminated, or in delicate veins.

Idem. Variety. Harlequin Opal.

Idem. Variety. Golden Opal colour, in distinct patches.

Idem. Hydrophanous, after absorbing water, displays colours, but less Chatoyant.

These varieties of precious Opal, when fine, are highly valued, and rank with the first class of precious stones.

COMMON OPAL. Colour, white, yellowish, reddish, &c.; is brittle, and very light; lustre shining and vitreous.

Idem. Milk-white, or pale blue.

Idem. Reddish brown.

Idem. Variety.

GIRASOL, or FIRE OPAL. Colour, generally reddish, yellowish, and greenish; with flame-like irridescence; appears as if fractured in all directions. Mexico.

CACHALONG. Colour, milk-white and greyish white; opaque; often stratified with Chalcedony.

SEMI OPAL. Colours, various, generally grey, white, and brown; it is distinguished from common Opal by being heavier, and not brilliant in colour.

Idem. Variety.

JASPER OPAL. Colour, red, brown, and yellow; sometimes spotted.

WOOD OPAL. Occurs of various colours, generally bright yellow; has a wood-like appearance, and conchoidal fracture.

The finest piece known, was brought by Dr. Clarke from Hungary.

Idem. Variety. Wood penetrated with Opal.

MENILITE.

BROWN MENILITE. Colour, plum blue; interior, pitch brown; occurs imbedded in adhesive clay.

GREY MENILITE. Occurs as the preceding, at Mount Menil, near Paris, and at Argenteuil.

JASPER.

RED EGYPTIAN JASPER. Colour, various shades of red; generally with curvilinear delineations.

Idem. Brown; is of various shades; in concentric stripes; often with black spots.

Idem. Variety. Exhibiting curious lusus naturæ, or dendritic appearances.

STRIPED JASPER. Generally brownish red, with green bands; occurs massive.

PORCELAIN JASPER. Grey, and dull blue; occurs massive; lustre, glistening, as if vitrified.

Idem. Variety. Reddish, greyish black, or yellowish; has the appearance of having been subjected to heat.

COMMON JASPER. Colour, red; massive and heavy; difficult to break; fracture, more or less perfect.

Idem. Yellow; compact; these varieties contain a large portion of Iron.

Idem. Sinopal; red variety.

AGATE JASPER. Colour, various, often an assemblage of white, red, and yellow; is opaque.

Idem. Variety.

AGATE.

Is well known, from its beautiful appearances, concentric, and angular lines, which defy description to do it justice; colour various, and finely contrasted.

STRIPED AGATE. Composed often of Chalcedony, Flint, and Amethyst, alternately, in lines.

Idem. Zoned; Agate Onyx.

Idem. Serpentine Agate; spotted variously.

AGATE BRECCIA. Apparently composed of different fragments cemented together.

FORTIFICATION AGATE. Angular lines so disposed as to represent fortification.

LANDSCAPE AGATE. Colours so dispersed as to represent landscape, or dendritic appearances.

MOSS AGATE. Appears of various colours, generally yellow, or red; with moss-like fibres; floating in Chalcedony; may be considered a Jasper Agate.

JASPER AGATE. Is a compound of Chalcedony, Hornstone, Jasper, and Agate.

SPOTTED AGATE. St. Stephen's Stone; Carnelian-spotted Red; in milk-blue Chalcedony.

ORIENTAL AGATE. Colour, generally grey; cloudy; often contains dendritic figures.

CLOUDED AGATE. Variety.

STAR AGATE. Variety; stellated.

PETRIFACTION AGATE. Variety.

PITCH STONE FAMILY.

OBSIDIAN. Colour, approaching black; occurs massive; compact; fracture, conchoidal.

Idem. Marekanite. Colours, smoke-grey, also dull bluish; occurs in rounded pieces.

PITCH STONE. Colour and fracture, like pitch, is dull green, brown, or reddish brown, and approaching black; exterior often decomposed.

Idem. Variety; very light; and melts easily.

Idem. Variety; red, or greenish.

PEARL STONE. Is generally dark smoke-grey; it occurs massive; and appears as if composed of aggregated grains, with a shining lustre.

PUMICE. Colour, is light and dark grey; occurs vesicular, and in capillary fibres; floats on water; is used for polishing.

GLASSY PUMICE. Is generally light or dark smoke-grey; vesicular and fibrous; intermixed with Obsidian.

PORPHYRITIC PUMICE. Colours, generally grey; contains Feldspar and Mica.

Pumice is of great use in the Arts for polishing; it is in great abundance in the Volcanic Islands in the Mediterranean, from whence it is exported to every part of Europe.

ZEOLITE FAMILY.

Gelatinizes with Nitrous Acid.

PHRENITE. Colour, green, which migrates into white; occurs crystallized, in four and eight-sided short prisms; distinct or aggregated.

Idem. Crystallized in flat four-sided tables; or variously modified.

Idem. Fibrous, or radiated; colour, green, migrating into various shades; occurs also acicular, and in four-sided prisms; melts with the blow-pipe.

ZEOLITES.

EARTHY ZEOLITE. Colour, generally white, or reddish; occurs massive; coating some of the species of Zeolite, or filling cells in Amygdeloid.

FIBROUS ZEOLITE. General colour, white, variously tinged; occurs massive and reniform in balls; composed of delicate fibres, often radiated.

MESOTYPE. NEEDLE ZEOLITE. Colour, generally grey, or greyish white; occurs in long four-sided prisms; finely crystallized or modified.

Idem. Red; foliated, or massive.

RADIATED ZEOLITE. Occurs in four-sided prisms, with dieadral summits.

STILBITE. Foliated Zeolite; occurs massive, and crystallized in flat four-sided prisms, and six-sided tables, or variously modified; has always a shining lustre.

Idem. Variety; red; foliated; compact or crystallized.

APOPHYLLITE. Fish-Eye Stone. Colour, generally white; like Calcareous Spar; occurs massive; crystallized in four-sided prisms, and variously modified; exfoliates in the flame of a candle; and easily melts.

Idem. In tabular four-sided crystals, or indeterminate; exfoliates in Acid.

CUBICITE. Crystallized in cubes, or modified; often truncated on the angles; colour, clear or reddish.

Idem. Variety.

CHABASITE. Colour, greenish white; occurs in rhombs, approaching the cube; is often modified.

Idem. Variety.

Idem. Green Zeolite; very rare.

CROSS STONE. Colour, generally white; occurs crystallized in broad four-sided prisms, with pyramids crossing each other.

Idem. Variety; yellowish red.

HARMATOME. Occurs in broad four-sided prisms, with pyramids, and variously modified; when forming twin crystals, is Cross Stone.

LAUMOLITE. Colour, snow-white, and greyish; occurs massive; and crystallized in oblique prisms; is subject to decomposition, if not kept in water.

DIPYRE. Colour, pearl-grey; occurs imbedded in disseminated small crystals; lustre, shining; melts before the blow-pipe; and is phosphorescent.

NATROLITE. Occurs of an ochre-yellow colour; is massive; zoned, or in delicate capillary crystals; contains a large portion of Natron.

WAVELLITE.

So called, in honour of Dr. Wavel, the discoverer. Contains Argil, Water, and Fluoric Acid.

WAVELLITE HYDRARGILITE. Colours, yellowish and brownish grey; occurs in spherical balls; fracture, stellated, sometimes irridescent.

Idem. Variety; crystallized in delicate oblique four-sided prisms.

Idem. Reddish brown, or black; exterior, rough.

BRAZILIANITE. Occurs massive; botroidal; and crystallized in flat rhombic prisms; fracture, stellated; consists of Argil 80, and water. From Villa Rica, Brazil. Is extremely rare.

The finest specimen of this peculiar variety is engraved and coloured in the Author's Travels through the Gold and Diamond District of Brazil.

AZURE STONE FAMILY.

Lapis Lazuli—Azurite—Hauyne—and Blue Spar.

LAPIS LAZULI. Colour, blue, of various shades; massive; and disseminated in spots; also crystallized in rhombic dodecahedrons; it is generally associated with pyrites; melts before the blow-pipe; and gelatinizes with acids.

Idem. Light-coloured variety.

AZURITE. LAZULITE. Colour, blue; occurs imbedded; and crystallized in oblique prisms, and four-sided pyramids.

HAUYNE. Colour, from deep to pale blue; occurs imbedded in Basalt and Feldspar rocks; in granulated concretions; also crystallized in rhombic dodecahedrons; gelatinizes with acids.

BLUE SPAR. Colour, pale blue; occurs massive and disseminated; is hard; fracture, splintery; occurs with Quartz, Mica, and Garnets, in beds of rock formation.

FELDSPAR.

Andalusite—Saussurite—Chiastolite—Indianite—Feldspar—Spodumene—Bergmanite—Scapolite—Elalolite—Sodalite—Meionite—Nepheline—and Ice Spar.

ANDALUSITE. Occurs of a reddish colour; massive; also crystallized in rectangular prisms; imbedded in Mica Slate.

Idem. Variety; pale grey; in distinct four-sided prisms; scratches glass.

SAUSSURITE. Occurs massive and disseminated; colour, white, grey, and green. Feldspar Tenase of Haüy.

CHIASTOLITE. MACLE. Colour, yellowish white; occurs in four sided prisms, formed by four three-sided prisms, shewing a cross; is sometimes hollow; generally filled with clay slate, in which it is imbedded, in long crystals small and large.

INDIANITE. Occurs in granular concretions of a grey colour; containing corundum, imbedded; is said to gelatinize with acid; and was first noticed by Comte Bournon; is rare.

ADULARIA. General colour, white, or dull white; occurs massive; and crystallized in oblique four-sided prisms, with pyramids, and variously modified; fracture, foliated; lustre, splendant.

MOONSTONE. Precious. Variety of the preceding; when cut in convex forms, exhibits a beautiful chatoyance, or floating light. Ceylon.

GLASSY FELDSPAR. Colour, greyish white; occurs imbedded in four-sided prisms; appearing cracked in various directions; lustre, shining.

LABRADOR FELDSPAR. Occurs massive and compact; colour, dull grey, exhibiting the most beautiful varieties of yellow, blue, green, &c.

Idem. Blue, or exhibiting various colours.

Idem. Variety; green, or blue and green.

Idem. Variety; flame-colour; margined, &c.

Idem. Variety; sometimes opalescent; colour, in small patches.

COMMON FELDSPAR. Occurs in great variety of colours, generally flesh-red, grey, or white; massive; and crystallized in rhombic prisms.

Idem. Crystallized in oblique four-sided prisms, variously modified; fracture, foliated.

Idem. Twin Crystals, or Macles.

Idem. Feldspar imbedded in Granite; fracture, foliated, and shining.

BLUE FELDSPAR. Occurs massive, crystallized, and imbedded; of various shades of blue; attended with brilliant Mica; is often disseminated.

GREEN FELDSPAR. Colour, light green; is massive and compact; and has a silver-like shining lustre.

DISINTEGRATED FELDSPAR. Is massive and disseminated; often decomposed; forming clay; dull and fragile; is used for making earthenware.

COMPACT FELDSPAR. Colours, various, generally white or grey; occurs massive; and crystallized in oblique four-sided prisms.

SPODUMENE. TRIPHANE. Colour, pale green; fracture, shining; it occurs massive; and crystallized in very oblique prisms; before the blow-pipe, exfoliates in gold-like scales.

RADIATED SCAPOLITE. General colour, grey, or greenish grey; is massive; and crystallized in oblique four-sided prisms, often modified and intersecting; sometimes associated with magnetic Iron and Mica.

FOLIATED SCAPOLITE. The colours stronger than the preceding; it occurs massive; and crystallized in oblique four-sided prisms, variously modified.

COMPACT SCAPOLITE. Colour, light green.

RED SCAPOLITE. Occurs in delicate four-sided prisms, sometimes rough and dull; also massive.

BERGMANITE. Occurs massive; of a greenish grey, or dull flesh-red; lustre, glistening; and fracture, fibrous, curved, and stellular; it scratches Feldspar.

ELAOLITE. FETTSTIEN. Colour, dull luish green, which sometimes migrates into brownish grey; is compact and foliated; gelatinizes with acids; and melts into a white glass; contains nearly 20 of Soda.

SODALITE. Colour, dark muddy green; occurs massive; and in rhomboidal dodecahedrons; is a rare mineral; contains 25 Soda, and a small portion of Muriatic Acid.

MEIONITE. Occurs in distinct and aggregated smooth four-sided prisms, with pyramids, and variously modified; of a greyish white colour; lustre, splendant; it is easily fusible.

NEPHELINE. Its colour is white, sometimes tinged yellowish or greenish; occurs crystallized in small six-sided prisms, generally aggregated; lustre, splendant; becomes clouded in Nitrous Acid.

ICE SPAR. Colour, greyish white, resembling Ice; occurs massive, cellular, and crystallized in six-sided tables; associates with Mica, Hornblend, and the preceding varieties. From Mount Somma, Italy.

CLAY FAMILY.

Aluminite—Alum Stone—Porcelain Earth—Slate Clay—Adhesive Slate—Polishing Slate—Tripoli—Float Stone.

ALUMINITE. Occurs in reniform masses; white, or yellowish white; adheres feebly to the tongue.

ALUM STONE. Colours, various, generally greyish, and reddish white; is both massive and porous; is brittle; and found in volcanic craters, &c.

PORCELAIN EARTH. Is a fine compact clay; generally white; and is probably a deposit of decomposed Feldspar, Silica, &c.

LOAM. Is an earthy alluvial deposit of Argil, Silica, &c.

POTTER'S CLAY. Common clay, of which earthen-ware, pipes, &c. are made; its colours and characters are well known.

Idem. Slaty; semi-indurated.

VARIEGATED CLAY. Colours, various; earthy.

SLATE CLAY. Occurs massive; colour, approaching black; generally contains vegetable impressions; is slaty, earthy, and soon decomposes.

ADHESIVE SLATE. Adheres strongly to the tongue; exfoliates by exposure; but becomes compact on being put into water; colour, grey.

POLISHING SLATE. Is little known or used in this country; it appears a fine deposit of Silica with Alumine; and used for polishing Brass, &c.

TRIPOLI. Colour, dull brown; is earthy and friable.

Idem. Rotten Stone is probably a decomposed Limestone, or alluvial deposit.

FLOAT STONE. Colour, yellowish grey; occurs massive; and appears a transition from Flint.

ALUM SLATE. Colour, approaching black; often covered with a white efflorescence of alum.

SHALE BITUMINOUS. Colour, black, or brownish black; it is hard, but soon decomposes.

DRAWING SLATE. Colour, black; is massive and compact; is used for drawing.

WHET SLATE. Colour, generally grey, yellowish, or greenish; is of fine texture; and used for sharpening steel instruments; Turkey hone.

CLAY SLATE. Is best explained by what is used for roofing houses; colour, various.

MICA FAMILY.

Lepidolite—Mica—Pinite—and Chlorite.

LEPIDOLITE. Occurs generally of a peach-red colour; and is composed of shining, delicate, scaly, particles, in six-sided prisms; melts easily.

Idem. Variety; greenish yellow or white.

MICA. Colour, various, generally grey, or brown; with splendant metallic lustre; occurs massive, in flexible plates; generally imbedded.

Idem. Crystallized in rhombic four or six-sided prisms.

Idem. Arborescent, forming groups; scratches Quartz; and melts with the blow-pipe.

Idem. Variety; imbedded or detached.

PINITE. Occurs in equiangular six-sided prisms; colour, blackish green; is imbedded in Granite.

CHLORITE.

EARTHY CHLORITE. Colour, dull green; is massive and disseminated; has a greasy feel; is soft.

Idem. Common. Occurs massive; colour, dark and dull green; melts with the blow-pipe.

CHLORITE SLATE. Is massive and compact; colour, blackish green; texture slaty, and probably passes into earthy; is very common.

FOLIATED CHLORITE. Colour, green, dark or light; crystallizes in six-sided tables, variously aggregated and grouped.

Idem. Aggregated; variety.

LITHOMARGE FAMILY.

Green Earth—Pimilite—Lithomarge—Mountain Soap—Yellow Earth—Cimolite—and Kollyrite.

GREEN EARTH. Occurs massive and globular, or almond-like, or lining cavities in Amagdaloid rock; feels greasy; contains a large portion of potash.

PIMILITE. Is an earthy green-coloured substance, more or less indurated; is dull; feels greasy; and contains 15 Oxyde of Nickel.

LITHOMARGE. Colour, snow-white; occurs massive and disseminated; is soft; adheres to the tongue; and falls to powder in water.

Idem. Indurated; occurs massive; colour, generally white; feels greasy.

MOUNTAIN SOAP. Colour, dark, sometimes greenish; occurs in cells in Trap Rocks.

YELLOW EARTH. Occurs massive; is soft; adheres to the tongue; feels greasy.

CIMOLITE. From the Island of Cimola (the famed Terra Sigillata,) formerly used so much in medicine.

The Author possesses some specimens from Sir Hans Sloane's Collection.

KOLLYRITE. Colour, reddish, and greyish white.

SOAP STONE FAMILY.

Valentianite—Native Magnesia—Magnesianite—Meershaum—Bole—Lemnian Earth—Fuller's Earth—Steatite—and Figure Stone.

VALENTIANITE. Its colour is light greenish blue; occurs massive; is harder than Serpentine; heavy; and found in large hexagonal crystals, and rolled pieces; fracture, splintery, and conchoidal; was brought from the Red Sea, by Lord Valentia.

NATIVE, OR HYDRATE OF MAGNESIA. Colour, white, or greenish white; lustre, pearly; fracture, foliated or radiated; is soft; and adheres slightly to the tongue.

MAGNESIANITE. Carbonate of Magnesia; colour, approaching cream-yellow, often spotted; and vesicular.

MEERSHAUM. Colour, greyish white; is massive; fracture, dull; is soft, and very light; adheres strongly to the tongue.

BOLE. Is earthy; of various colours, generally red; adheres to the tongue; when put in water falls into powder with a hissing noise.

LEMNIAN EARTH. A sealed earth; marbled or grey; was formerly used in medicine.

It was sent from Lemnos, with religious ceremony, stamped with a seal; specimens of which, from Sir Hans Sloane's Collections, are in the Author's possession.

FULLER'S EARTH. Colour, greenish grey; dull; earthy; is massive; and feels greasy; falls into powder in water, without noise; melts with the blow-pipe; and is used to clean woollens.

STEATITE. Soap Stone. Appears white, or like mottled soap; feels greasy; and occurs massive; of various colours.

Idem. Crystallized in four or six-sided prisms; imbedded; also striated.

Idem. Variety.

Steatite contains 60 Silica, 30 Magnesia, with Iron and Water.

FIGURE STONE. Agalmatolite. Colour, generally grey, often spotted; occurs in carved figures, &c. from China; feels greasy; differs from Steatite, by not containing Magnesia.

TALC FAMILY.

Nephrite—Serpentine—Pot Stone—Talc—Nacrite—Asbestus—Picrolite.

NEPHRITE, JADE. Colour, dull, light green; texture, fine; translucent on the edges; is moderately hard;

compact; and greasy to the touch; takes a high polish, and is used for ornaments.

AXE STONE, JADE. General colour, green, darker or lighter; occurs massive and compact; it is used in New Zealand for hatchets.

SERPENTINE. Colours, various, as green, brown, and red; often intermixed; is massive, and sometimes magnetic.

Idem. Variety; spotted; or colours finely contrasted.

Idem. Variety; greasy to the touch; colours, dull.

Idem. Variety; often contains veins of Asbest.

PRECIOUS SERPENTINE. Colour, green, spotted, dark green; occurs massive; is translucent; easily yields to the knife; is used for snuff boxes, &c.

POT STONE. Colour, generally greenish grey; is massive; soft; fracture, imperfectly foliated; feels greasy; and is worked into culinary utensils.

Variety.

TALC.

VENETIAN TALC. Colour, shining, greenish white; occurs in delicate foliated six-sided crystals; is peculiarly soft; and agreeably smooth to the touch.

This variety forms the base of Rouge; communicates a softness to the skin, without any pernicious effect.

Idem. Variety; foliated; distinctly crystallized, or aggregated.

Idem. Semi-compact; foliated.

COMPACT TALC. Is massive; and of white colour; is soft; very compact; and feels greasy to the touch.

COLUMNAR TALC. Occurs in thin prismatic concretions of a greenish grey colour.

EARTHY TALC. Nacrite. Colour generally greenish; consists of delicate scales; pearly lustre; is friable, and feels greasy.

ASBEST.

ROCK CORK. Colour, greyish and cream white; is soft and very tough, absorbs water like sponge.

Idem. Variety; resembling leather; is very light.

AMIANTHUS. Its general colour is white, with a silky lustre; it is composed of delicate flax-like fibres.

Idem. Variety; in delicate veins.

ASBESTOS. Is a variety coarser than the preceding.

Idem. Variety; on the matrix or detached.

ROCK WOOD. Occurs massive; is common Asbestos; compact, having a ligneous appearance.

Idem. Variety; fracture, splintery.

Idem. Variety.

HORNBLENDE FAMILY.

Hornblende—Actynolite—Tremolite—Kyanite—Schiller Spar—Diallage—Bronzite—Anthophyllite—Hyperstene.

COMMON HORNBLENDE. Colour generally dark blackish green; occurs massive, and crystallized in rhomboidal four-sided prisms, streaked lengthways.

HORNBLENDE SLATE. Colour, blackish green, glistering; occurs massive; fracture, slaty.

Idem. Basaltic. Occurs imbedded in Basalt, in black hexagonal prisms.

ACTYNOLITE.

ASBESTOS ACTYNOLITE. Colour, grey, or greenish white; occurs aggregated in tender spiculæ; is always rough and coarse to the touch; melts with difficulty.

Idem. Common. Colour, green of various shades; occurs massive and disseminated, in aggregated indeterminate prisms.

Idem. Glassy. Colour, various shades of green, with considerable lustre; occurs in oblique four-sided prisms, imbedded; is often separated by rents.

Idem. Variety.

TREMOLITE.

ASBESTOS TREMOLITE. Colour, generally white, variously tinged; occurs massive, with a fibrous and stellular fracture; phosphoresces on being placed on a red-hot substance.

Idem. Variety; colour, brownish grey; fracture, stellular.

Idem. Common; colour, greyish white, or smoky.

Idem. Crystallized in very oblique four-sided prisms, generally imbedded; colour, white and greyish, with a shining lustre; streaked lengthways.

Idem. Glassy. Colours, light as the preceding; occurs massive, and crystallized in acicular crystals.

Idem. Granular.

TREMOLITE is generally light coloured, never *green*; ACTYNOLITE is green; and HORNBLENDE, dark and dull green.

KYANITE. Colours, generally sky blue, of various shades, often clouded; occurs aggregated and

distinctly crystallized in long oblique four-sided prisms; sometimes truncated.

Idem. Variety; approaching white.

Idem. Variety; imbedded in Mica, Slate, and associated with Granatite.

SCHILLER SPAR. Colours, black green and metallic brown; occurs in serpentine, with patches of a splendant lustre.

DIALLAGE. Colour, generally green, which migrates into light brown.

BRONZITE. Occurs the colour of Bronze brown, with shades of yellow; is massive and disseminated, with metallic lustre.

ANTHOPHYLLITE. Occurs in aggregated reed-like crystals, approaching four-sided prisms of an intermixed brown and grey colour; with semi-metallic lustre.

HYPERSTENE. Its colour is a mixture of brown, black, and copper, sometimes each predominates; lustre, strongly metallic; fragments, rhomboidal.

CHRYSOLITE FAMILY.

Sahlite—Angite—Diopside—Chrysolite—Olivine—and Yenite.

SAHLITE. Colour, green of various shades; occurs massive, and crystallized in four-sided prisms, variously modified.

Idem. Crystallized, imbedded, or detached; in primitive limestone.

COMMON ANGITE. Colour, blackish green, black; occurs in grains and crystallized.

Idem. Foliated; colour, approaching black; crystallized unequiangular four and six-sided prisms, with diedral summits.

Idem. Occurs in imbedded grains; fracture, conchoidal.

COCCOLITE. Colour, green, and various shades of green; occurs granular, aggregated, or imbedded.

Idem. Crystallized in four and six-sided prisms, rounded, passing into granular; lustre, glistening.

DIOPSIDE. Its colour is green of various shades; it occurs finely crystallized in four-sided prisms, with pyramids variously modified.

MUSSITE. Colour, light green; occurs in fibrous aggregated crystals, with a radiated fracture.

CHRYSOLITE. Colour, is oil green; occurs generally imbedded, filling cavities; rarely crystallized in oblique four-sided prisms.

OLIVINE. Occurs in aggregated granular concretions, also in rounded pieces, and imbedded; colour, is various shades of green, sometimes brown.

Idem. Variety; rarely crystallized in four-sided prisms; sometimes brown and earthy in decomposition.

YENITE-LIEVRITE. Colour, approaching black; in rectangular four-sided prisms, with regular pyramids.

Idem. Variety; massive, fascicular, or indeterminately crystallized; is very heavy.

Yenite has heretofore only occurred in *Elba*; was discovered by Le Liever, and has been sold at very high prices.

BASALT FAMILY.

Basalt—Wacke—and Clinkstone.

BASALT. This rock is of a blackish dull colour; occurs in large column-like prisms.

WACKE. Occurs of a dull brown, and greyish colours; vesicular.

AMAGDALOID. Wacke with the cells filled with Zeolite, green earth, Calc spar, &c.

Idem. Variety.

CLINKSTONE. Colours, green of various shades; is massive and compact; is slaty; and when struck, a ringing sound is produced.

DOLOMITE FAMILY.

Dolomite—Brown or Pearl Spar—Bitter Spar—and Gurhofite.

This family contains large portions of Magnesia, and effervesces feebly with acids.

DOLOMITE. Colour, snow-white; granular; marble; often contains Realgar and Pyrites.

Idem. Variety; flexible.

BITTER SPAR. Rhomb Spar; colour, yellowish; occurs imbedded in rhombs in Chlorite Slate, &c.; contains a portion of Magnesia; scarcely effervesces with acid.

Idem. Variety; brown, approaching black; aggregated.

MIEMITE. Occurs in short hexaedrons; of a green colour; imbedded in Alabaster.

MAGNESIAN LIMESTONE. Colour, various; is massive; has a glistening lustre; contains a large portion of Magnesia; is common at Matlock, Derbyshire.

FLEXIBLE LIMESTONE. Colour, various; Carara Marble; in thin slices; is slightly flexible.

PEARL SPAR. Occurs of various colours, generally grey and brown, with a pearly lustre.

Idem. Crystallized in rhombs upon other substances.

Idem. Flat, double three-sided pyramids.

Idem. Stalactitic; mammillated, &c.

Idem. Rose-coloured.

FIBROUS PEARL SPAR. Occurs in prismatic fibres upon Quartz; colour, various.

Idem columnar. Occurs in irregular prisms crossing each other, and formed by acicular crystals; colour, light grey; lustre, shining.

GURHOFITE. Colour, said to be snow-white; massive, hard, and brittle; contains 30 Magnesia, with Lime.

LIMESTONE FAMILY.

Tabular Spar—Slate Spar—Aphrite—Agaric Mineral—Chalk—Limestone—Lucullite—Marl—Bituminous Slate—and Arragonite.

TABULAR SPAR. Occurs massive, and crystallized in flat rectangular tables; colour, greyish white; is rather hard, and brittle; when put into Nitrous Acid effervesces for a moment, and granulates.

Idem. Variety; accompanying Cinnamon Stone.

Silica 50, Lime 45, Water 5.

SLATE SPAR. Occurs massive, and in distinct concretions; granular and lamellar; lustre, pearly; fracture, slaty.

Idem. Variety; composed of flat rhombs; lustre, pearly; from Mexico; effervesces strongly.

SCALY APHRITE. Occurs in crystals: scaly and friable; of a light silvery colour; and effervesces violently.

Idem. Variety; slaty, sparry, &c.

CHALK. Compact; too well known to need description.

Idem. Pulverulent, Agaric Mineral.

LIMESTONE.

COMMON LIMESTONE. Colour, various; effervesces with acid, and burns to lime; is massive, and compact.

ROE STONE. Oolites. Composed of globular minute concretions; colour, yellowish brown. Bath Stone is a variety.

GRANULAR LIMESTONE. Marble. Colours, generally white.

TIREE MARBLE. Colour, reddish; contains Sahlite, and probably Titanium; imbedded.

MONA MARBLE. Colour, white and green, resembling Verd Antique.

BLACK MARBLE. Lucullite. Occurs in Derbyshire, the finest variety belongs to the Duke of Devonshire; of which vases, ornaments, &c. are made.

SWINE STONE. Colours, various, generally bluish grey,

and clouded; is granular; when rubbed, emits a disagreeable smell.

PRISMATIC LUCULLITE. Madreporite. Colour, approaching black; imbedded; resembles Madrepore.

LUMACHELLA. Opalescent or Fire Marble.

Idem. Shell Marble; composed of Shells, &c.

Idem. Variety; composed of Corals or Zoophytes.

Idem. Variety.

CALCAREOUS SPAR.

Primitive form, rhomb, from which it passes into almost innumerable varieties; colour, various, generally light; cleavage, parallel to the planes; effervesces with acid, and burns to lime; refracts double.

CALCAREOUS SPAR. Double three-sided pyramid, or primitive rhomb.

Idem. Modified; with planes on the edges.

Idem. Convex; spheroidal.

Idem. Fragment, to shew the three-fold cleavage.

Idem. Double six-sided pyramids, joined at their base; Metastatique; Dog-tooth Spar.

Idem. Short six-sided prism, turned one-sixth, so that the lines of the pyramids correspond.

Idem. Six-sided prism, acuminated.

Idem. Six-sided prism, without pyramid.

SPARRY LUCULLITE. Crystallized in double-sided pyramids; blackish brown; bituminous. Derby.

FIBROUS LIMESTONE. Satin Spar; occurs snow-white, in short aggregated fibres; compact; associated with Pyrites.

Idem. Variety; sometimes bluish and green.

STALACTITE. Is of various colours, as white, green, brown; fracture, fibrous and foliated.

Idem. Tube form, in long tubes.

Idem. Icicle form; botroidal, &c.

Idem. Yellowish or green; massive.

Idem. Stalactite. St. Michael's Cave, Gibraltar; zoned; Oriental Alabaster.

CALC. TUFFA. Is an earthy Carbonate of Lime, deposited on the banks of rivers, or by waters; from calcarious strata.

Idem. Variety; coating, or cellular fibres of wood are often incrusted by this substance, and sold as petrifactions at Matlock and Naresborough.

PEA STONE. Is composed of rounded pea-like concretions, colour generally brownish white.

MARL. Occurs of various colours, the purest is that found in caverns, in limestone. In vallies it is more or less combined with other substances.

INDURATED. Containing impressions of fish and dendritic appearances.

Idem. Cottam Marble.

Idem. Bituminous; contains impressions of fish, &c., often associated with Pyrites.

ARRAGONITE.

Is harder than Calc Spar, and has a different cleavage; contains Strontian.

ARRAGONITE. Occurs in equiangular six-sided prisms; reed-like at the terminations.

Idem. Aggregated, grouped, or imbedded in earthy or granular gypsum.

Idem. Columnar; of a pearly lustre; arborescent; rounded; branch-like; stalactitic.

Idem. Acicular. Variety; snow-white. Floss Ferri.

Idem. In delicate spiculæ, or fibrous.

APATITE PHOSPHATE OF LIME.

Becomes luminous when thrown on hot coal.

Apatite. Occurs of a greyish and green colour; crystallizes in six-sided prisms.

Idem. Imbedded; sometimes truncated.

Idem. Variety; colour, green, or bluish green; crystallized in hexagonal tables or prisms.

Idem. Variety; snow-white; occurs crystallized, and variously modified.

Phosphorite. Its colour is generally light, reddish, and brown; occurs in distinct concretions, in crusts.

Idem. Earthy; this variety occurs massive, and generally of a whitish and yellowish colour.

FLUOR.

Fluoric acid gas is found with fluor and sulphuric acid.

Colours, various; occurs compact, foliated, and crystallized in great variety, also granular and earthy; decrepitates on the application of heat, but becomes phosphorescent, and melts; does not effervesce with acids.

Compact Fluor. Colour, blue grey, greenish white;

not unlike Chalcedony; is massive; yields a white streak with the knife. *Rare.*

Idem. Foliated; colour, brownish grey.

FLUOR. Crystallized in cubes, the most common form.

Idem. Variety; with pyrites interior.

Idem. Variety; pale blue, cubes covering each other.

Idem. Variety; with bevelled edges; or truncated.

Idem. Variety; four-sided pyramids on each plane.

Idem. Variety; with triangular planes on the angles.

Idem. The solid angles truncated, or variously modified.

Idem. With modifications on the edges and angles.

Idem. Variety.

OCTOHEDRON FLUOR. Colour, generally green and white; fracture; zoned.

Idem. Variety; pale green, or blue; often imbedded.

Idem. Variety; composed of aggregated crystals.

Idem. Variety.

ARGILLACIOUS FLUOR. In detached cubes; sometimes indented; colour, brown.

FOLIATED FLUOR. Occurs in aggregated indistinct prisms; is massive and zoned; blue and white.

Idem. Variety.

Idem. Granular; occurs white, purple, and blue; coarsely granular.

Idem. Earthy; friable.

Idem. Topazine; fine yellow false Topaz.

Idem. Sappharine; dark blue; false Sapphire.

Idem. Amethyst fluor; false Amethyst.

Idem. Emerald fluor; false Emerald.

Idem. Pink; false Ruby.

Idem. Opaline. Opalescent; in cubes.

The Cube, Rhomb, Tetrahedron, and Octohedron, may be formed by the knife, and shew its four-fold cleavage. Blue fluor, by heat, becomes purple; if the heat is increased, the colour vanishes.

GYPSUM.

Gypsum—Anhydrite—Vulpinite—and Glauberite.

Burns to plaster of Paris, and becomes opaque in the flame of the candle.

EARTHY GYPSUM. Its colour is cream and snow-white; is composed of granular particles loosely coherent.

COMPACT GYPSUM. Colour, white or variegated; veined red and white.

FIBROUS GYPSUM. Occurs in long silky fibres; translucent and opaque; brilliant; satin, or snow-white.

FOLIATED GYPSUM. Occurs generally white, rarely red or reddish; is both massive and crystallized.

PLUMOSE. Occurs snow-white, in beautiful capillary curls; mammilated.

SELENITE. Occurs in hexagonal prisms; or variously modified.

Idem. Finely crystallized in prisms.

Idem. Twin crystals.

Idem. Yellow selenite; arrow-headed, &c.

ANHYDRITE.

Gypsum without water, Sulphuric Acid 56, Lime 42.

ANHYDRITE. Colour, milk and bluish white; is massive.

Idem. Fibrous. Is said to be red colour; and massive.

Idem. Radiated. Colour, grey and blue; occurs massive; and has a radiated fracture.

Idem. Sparry. Cube Spar; occurs in crystals of that form, and imbedded in a granular variety.

VULPINITE. Colour, bluish white; is massive; harder than the preceding varieties, and contains Sulphate of Lime 92, Silica 8.

GLAUBERITE. Colour, greyish white; occurs in oblique small crystals, imbedded in rock salt; is soluble in water.

BORACITE FAMILY.

Silica 30 *to* 90. *Lime and water* 5 *or* 6.

DATHOLITE. Its colour is pale greenish white; is massive, and crystallized in cubes; sometimes modified; is from Norway.

Idem. Coating; melts easily before the blow-pipe; is very compact.

FIBROUS BOTROLITE. Occurs botroidal, in delicate concretions; fracture, stellular; and lustre pearly colour; generally grey.

Idem. Earthy.

BORACITE. Colour, grey; opaque, or translucent; occurs crystallized in cubes, and variously modified.

Idem. Variety; imbedded in Gypsum.

Idem. Variety; crystallized.

Boracite is considered a simple Boreate of Magnesia.

BARYTE FAMILY.

Carbonate of Barytes—Heavy Spar—Hepatite—Strontian—and Celestine.

CARBONATE OF BARYTES. Occurs in large masses; fracture; generally fibrous and diverging.

Idem. Crystallized in six-sided prisms, and pyramids imbedded.

Idem. The preceding modified, or in double six-sided pyramids.

Idem. Aggregated; cellular, spheroidal, or in crusts.

Is soluble in weak acid, and melts with the blow-pipe.

SULPHATE OF BARYTES. Heavy Spar.

Idem. Earthy; colour, white; chalk-like; loosely cohering; is heavy.

Idem. Compact variety; yellowish white; is massive; reniform, &c.; often contains delicate veins of Galena. From Castleton, Derbyshire.

Idem. Granular.

CURVED BARYTES. Occurs of various colours; generally yellowish brown; has a curved and dendritic appearance.

Idem. Crystallized in distinct four-sided tabular forms, generally with the edges bevelled, and corners truncated.

Idem. Variety; transparent.

Idem. Fibrous.

Idem. Radiated.

Idem. Columnar; occurs of a yellowish grey colour, composed of acicular crystals, often interwoven.

PRISMATIC BARYTES. Is generally of a wine yellow colour, and crystallized in oblique four-sided prisms, with diedral summits.

HEPATIC BARYTES. Colour, brownish smoke grey; occurs massive, and nodular; fracture, curved, or foliated.

STRONTIAN.

Effervesces with acids, and burns with a purple flame. Strontian 60 to 70, with Carbonic Acid.

STRONTIANITE. Colour, pale green, white green, and brown; occurs massive; fracture, radiated, or fibrous.

Idem. Variety; crystallized in six-sided prisms, generally small.

Idem. Variety; brown, or pale green.

Strontianite is generally imbedded with earthy Barytes, and associated with Galena.

SULPHATE OF STRONTIAN.

Strontian 57, Sulphate Acid 43.

CELESTINE. Colour, sky blue, and bluish grey; occurs massive, and foliated.

Idem. In tabulated crystals, indistinctly formed; colour, white bluish, or reddish.

Idem. Variety.

Idem. Radiated in fibres; colour, yellowish white, or pale blue; sometimes crystallized in oblique prisms.

Idem. Fibrous; occurs curved; is massive; colour, pale blue, and white.

Idem. Compact; colour, brown, of various shades; occurs in hollow balls, inside delicately crystallized.

CRYOLITE.

Alumina 21, Soda 32, Fluoric Acid and water 47. Takes its name from melting like ice, being so easily fusible, from the large quantity of Soda which it contains.

Cryolite. Colour, approaching white; it occurs massive; has a glistening lustre and spar-like appearance; fracture, foliated; is translucent, and softer than fluor. A large quantity arrived at Leith, in a ship from Greenland; and, as it is there in abundance, more of this interesting substance may be expected.

EARTHY SALTS.

Salts, with an earthy basis, dissolve in water, and frequently deliquesce by the humidity of the atmosphere; therefore, are generally kept in close glass vessels.

NATIVE ALUM.

Alumina 18, Oxide of Iron from 5 to 10, with Sulphuric Acid and water.

Idem. Variety.

SALTS OF MAGNESIA.

Epsom Salt, Sulphuric Acid 33, Magnesia 19, and water.

ALKALINE SALTS. Soda, variously combined.

NATRON. Occurs in efflorescence.

Idem. Variety; acicular; effloresces.

SULPHATE OF SODA. Glauber Salt.

ROCK SALT. Muriate of Soda.

FIBROUS.

COMPACT.

BORAX. Boracic acid 40, Soda 10, and water; occurs in oblique six-sided prisms.

SASSOLINE. Native Boracic acid, 86 to 90; occurs in crusts, in extinct volcanoes; is very light.

SALTS OF POTASH. Nitrate of Potash 45, and lime.

NITRE. An efflorescence upon various Earths.

SALTS OF AMMONIA. Muriate of Ammonia 98.

VOLCANIC SAL AMMONIA. Is found in Volcanic countries; is sometimes crystallized in various forms; also occurs stalactitic, and in efflorescence; may be known by its taste.

SULPHATE OF AMMONIA. Occurs in Lava.

INFLAMMABLES.

NATIVE SULPHUR. Occurs massive; disseminated and crystallized; the finest varieties are from Coneil, in Spain.

Idem. Crystallized in distinct double, four and six-sided pyramids; or aggregated.

Idem. Variety; disseminated.

VOLCANIC SULPHUR. Occurs stalactitic; spongeous and crystallized; colour, yellow, of various shades.

Idem. Variety; granular; or aggregated crystals.

Idem. Variety.

BITUMEN.

NAPHTHA. Fluid bitumen.

Composed of Carbon, Hydrogen, and Oxygen; takes fire at the approach of flame.

PETROLIUM. Blackish brown; is thick; floats on water; it may be seen oozing from various strata.

ELASTIC BITUMEN. Colour, blackish, greenish, and yellowish brown; occurs massive; filling holes in limestone, is peculiar to Castleton, Derbyshire.

Idem. Variety; more or less elastic.

Idem. Variety; cork-like.

Idem. In the interior of fossil shells.

INDURATED BITUMEN. Colour, brown; fracture perfectly conchoidal; lustre, shining; is brittle.

Idem. Variety; sometimes porous.

COAL.

Bituminous Wood. Bovey Coal, has a ligneous appearance, and burns with a disagreeable smell.

Earthy Brown Coal. Occurs with the above.

Alum Earth. Blackish brown; burns feebly.

Brown Coal. Fracture conchoidal; variety of Bovey Coal; structure, wood-like.

Black Coal. Jet.

Slate Coal. Newcastle Coal.

Cannel Coal. Is massive and compact.

Shining Coal. Often beautifully irridescent, and called Peacock-coal; is fragile; fracture foliated.

Slaty Coal. Colour, black, and sometimes shining grey; often contains layers of charcoal, in regular strata. Derbyshire, and other coal countries.

Foliated Coal. Is very soft and light.

GRAPHITE.

Glance Coal. Conchoidal, Slaty, and Columnar; has a peculiar iron black, and tempered steel-like appearance. Forest of Dean.

Scaly Plumbago. Occurs massive and disseminated; rarely crystallized in six-sided tables; is very soft.

Idem. Compact. Is used for pencils, crayons, &c.; known better by the name of Black Lead.

MINERAL CHARCOAL. Occurs in thin layers. See Slate Coal.

RESIN FAMILY.

AMBER. Colour, yellow, or yellowish white, and reddish; occurs in rounded pieces; exterior rough, sometimes decomposed; is found on the Norfolk coast.

Idem. With insects in the interior. Mozambique.

Idem. Imbedded in Coal; colour, various shades of yellow.

HONEY STONE. Occurs imbedded in grains, or crystallized in flat octahedrons; of a yellow colour, in Wood Coal.

Idem. Variety; imbedded in angular fragments.

RETIN ASPHALT. Colours, yellowish and reddish brown; occurs massive; burns with a fragrant odour.

Resin 55, Asphalt 42, residue 3.

FOSSIL COPAL. Appears a variety of Retin Asphalt; approaches more to Amber; has sometimes a resinous lustre.

APPENDIX.

ADDITIONAL SPECIES,

AND

New Substances.

PYRENITE. Colour, greyish black; occurs massive, and crystallized in rhombic dodecahedrons; it occurs imbedded in primitive Limestone; melts before the blow-pipe.

LYTHRODES. Colour, red; it occurs massive and disseminated; when fresh broken, appears stained with blood. Contains Silica, 44; Alumine, 37; and about 8 of Soda.

RHAETIZITE. Colour, cream yellow, and brick red; lustre, pearly; fracture, radiated, inclining to fibrous.

NEW SUBSTANCES.

ROCKS.

THIS PART BELONGS TO THE SCIENCE OF GEOLOGY.

Rocks are either simple or compound; the simple are those which consist entirely, or at least essentially, of one Mineralogical species, and are therefore arranged amongst the Simple Minerals. Such are Limestone, Gypsum, Serpentine, Rock Salt, and Coal.

The Compound Rocks are formed of two or more Mineralogical Species, variously aggregated in different proportions, and differing in magnitude.

By Rocks are meant, the massive substances which compose the surface of the Earth, whether in the shape of mountains, or below the loose alluvial soil in valleys. They have their distinct formation and peculiar characters, so as to enable the Geologist to judge of their relative antiquity with respect to each other, and by analogy to form an idea of those substances which accompany them. Thus, if a coralloid Limestone be found resembling that in Derbyshire, similar companions may naturally be expected, though it may not prove so in many cases.

According to Werner, there are three distinct classes of Rocks, formed at different and very distant periods.

What are termed Primitive Rocks, as the term implies, are such as were formed first; they do not contain fossil remains, and are supposed to have had

their origin before the creation of animal or vegetable substances, the result of chemical precipitation.

GRANITE. Is a crystalline aggregate, consisting of Quartz, Felspar, and Mica, in crystals or crystalline grains, promiscuously arranged.

a Common Granite.

b Large grained.

c Small grained.

d Graphic Granite.

e Porphyritic Granite, containing large crystals of Felspar; imbedded.

f Granite, the Felspar of which is decomposing and forming Clay.

GRANITE is supposed the oldest Rock, and forms the most elevated mountains, as well as the lowest, the others resting upon it in various directions.

GNEISS. Slaty Granite. Consists of Quartz, Felspar, and Mica; the latter in more abundance than in Granite, and it is laminated or stratified; hence it is coarsely slaty and sometimes waved.

a Variety.

MICA SLATE. Consists of Quartz and Mica; sometimes laminated, and with small portions of Felspar. This Rock is considered to pass into Clay Slate.

a Waved; slaty.

b With crystals of Garnet imbedded.

CLAY SLATE. This is a Simple Rock, and has been described amongst the Minerals.

a Roofing Slate.

b Slate, in which Chiastolite is imbedded.

c Variety.

PRIMITIVE LIMESTONE. Is that which contains no fossil remains, as Carrara and some other Marbles, which have been described as Simple Minerals.

a Tiree Marble; colour, reddish; contains Sahlite and Titanium; imbedded.

b Dolomite; Granular Limestone.

c Carrara Marble.

PRIMITIVE TRAP. Is an aggregate, principally of Hornblende and Felspar; consists of great variety, differing in colour and texture, concerning which Geologists are much divided.

a, *b* } Varieties.

SERPENTINE. Is a Simple Rock, and has been before described; it often contains Hornblende; is frequently spotted; veins of Asbest occur in it, also Steatite.

PRIMITIVE PORPHYRY. A compact base of Claystone, not unlike Jasper; colour, generally red or brown, in which distinct crystals of Felspar are imbedded.

There are varieties of Porphyry; the Egyptian and Swedish are here referred to.

SIENITE. This Rock consists of Felspar and Hornblende (sometimes small portions of Quartz and Mica); it is of various colours, as reddish, dull green, &c. Is, *in situ*, very hard.

a With red Felspar and dark green Hornblende. Leicestershire.

b Variety.

TOPAZ ROCK. Is a Granite-like aggregate, containing Topazes, and frequently Schorl.

QUARTZ ROCK. Is compact; varieties often contain Schorl and other substances.

a Schorl Rock.

b With Titanite or other substances.

FLINTY SLATE. Is a black compact substance of very close texture; often contains veins of Quartz; it is very hard, and has been described amongst the Minerals.

PRIMITIVE GYPSUM. Is that which occurs with any of the preceding rocks; in texture it does not differ from other varieties, therefore can only be determined to be Primitive by its situation. It has been before described.

WHITE STONE. Is apparently a variety of fine-grained Granite, chiefly composed of granular Felspar; it is not found in this country. Garnets are often imbedded in it.

Thus ends the Series of what are termed Primitive Rocks, according to Werner's theory; but they must be supposed to form infinite variety in actual proportions, and to have undergone great alterations from various causes, notwithstanding the regular arrangement of authors. The mode of formation of what are termed Primitive and Secondary Rocks is by no means a determined point.

SECONDARY ROCKS.

The Transition formation (as it is termed) contains only four varieties, being mechanical deposits, formed by the debris of the Primitive Rocks, and containing traces of organic remains.

It is not easy to form any thing like a correct opinion of the alteration substances undergo after decomposition, and being exposed to both water and heat, for a series of ages. This formation may be supposed to be placed in their original state at the base of the Primitive Rocks, filling ravines, or skirting mountains.

TRANSITION LIMESTONE. Is most common in Devonshire, where it fills ravines between Clay-slate; it rarely contains Fossil remains.

TRANSITION TRAP. Green Stone. This substance forms great variety, and is composed of Quartz and Hornblende, in different proportions, and of different colours. The Derbyshire TOADSTONE probably belongs to this species; it forms innumerable varieties in its various stages of decomposition, as do Basalt and Whinstone.

a Trap; Greenstone.

b Variety; Whinstone.

c Basalt.

d Toadstone.

e Variety; in decomposition.

f Amagdaloid.

g Wacce.

GREY WACCE. Is a mechanical deposit of Quartz, Clay-slate, and fragments of Primitive Rock, in coarse and fine particles; sometimes slaty. Geologists differ much respecting what is, and what is not, Grey Wacce. Varieties of it are nearly allied to Greenstone, and some contain organic remains.

a Grey Wacce.

b Variety; slaty.

c Variety.

TRANSITION FLINTY SLATE. Is Flint stratified, and occurs with the Derbyshire Toadstone.

Thus ends the division of Transition Rocks.

It is obvious that if they were formed from the debris of the Primitive, they must have extended in an infinite degree beyond the limits here prescribed; and if confined to these few species, their varieties must have been multiplied beyond any thing that this gives us an idea of.

THE FLOETZ, OR FLAT FORMATION.

Formed after the preceding, the result of their decomposition, mixed and combined with animal and vegetable matter, precipitated at various periods, and having undergone vast alterations and changes, constituting a series of the greatest importance, in the crust of the earth. Of this formation are the plains betwixt mountains of the preceding divisions, and tracts of many miles in extent.

The first in this series is supposed to lie under or beneath the others, and to have been formed prior to the rest, and is called

OLD RED SANDSTONE. An aggregate of Siliceous particles, evidently produced from the debris of other substances; it is considered to rest on the transition formation, and next to it is

FLOETZ LIMESTONE. Which contains more or less of Fossil remains, as Madrepores, Zoophytes, &c. is evidently formed under water, and *constitutes considerable tracts of country.*

FIRST GYPSUM. Is not of great extent, though in great abundance; it has been before described under Gypsum; in some cases it rises into small hills, and fills cavities; is always accompanied with red and green Clay.

VARIEGATED SANDSTONE. Is a variety of Sandstone, a finer deposit more or less pure, coloured by the Oxide of Iron, and is often marked with horizontal lines; stratified.

SECOND GYPSUM. This occurs filling cavities; it lies insulated, surrounded by Clay, rounded Pebbles, and Sandstone; it is often fibrous, and is very soft.

SHELL LIMESTONE. Is evidently of more modern formation than the Limestones before-mentioned; it is almost wholly composed of shells.

THIRD SANDSTONE. Is of modern formation, and may be considered the uppermost, and what is daily forming by accumulation on the banks of rivers, &c.

ROCK SALT. Its situation is peculiar; it is very widely diffused, being under some varieties of Sandstone, and above others. It is accompanied with Gypsum, and varieties of Clay, probably, decomposed Trap. In this country the beds of Rock Salt are about fifty to sixty fathoms deep, and are peculiar to Cheshire.

CHALK FORMATION. Is of great extent and depth.

FLOETZ TRAP. Is a homogeneous deposit; seldom indurated, and probably soon decomposes into Clay.

BITUMINOUS SHALE, which forms a large range in Derbyshire, is not even noticed in the Wernerian series. Its place is next to the Floetz Limestone; and next, *in situ*, in that interesting country, the Peak, is a variety of Granite, called coarse grit, that deserves attention.

COAL FORMATION. Coal occurs, alternating with beds of Sandstone, and is called "independent Coal formation." Sandstone of different formations, Clay of various colours, more or less indurated, and Clay Iron-stone are generally associated with Coal.

NEWEST TRAP. Is probably an earthy homogeneous substance; and what is not met with in our Coal formation, except in a disintegrated state.

ALLUVIAL DEPOSITS.

CASCALHAO. An Alluvial Deposit, consisting chiefly of rounded and angular Pebbles, with Sand; this formation is immediately incumbent on the Rock (in the Gold district of Brazil), and amongst these loose stones are found Diamonds, Gold, Topaz, Amethyst, &c. This stratum is often covered many feet by a vegetable deposit, forming the richest soil.

For a more peculiar description, see the Author's Travels through the Diamond District in Brazil.

GRAVEL. Is too well known to need description; in some places it has been found forty feet thick, and incumbent on Sand-stone; in it Wood Coal is often found; rounded stones, becoming cemented, form aggregates, called Pudding-stone.

SAND,
MARL,
&c.
} Are too well known to need description.

VOLCANIC ROCKS.

Rocks, in which volcanoes are situated, are called Volcanic, and are so, if altered by fire; they form considerable varieties, more particularly the Lavas, Cinders, and Ashes.

a Volcanic Rock.

b Variety.

c Lava; compact.

d Cellular.

e Spongeous.

f Ashes, Volcanic.

Rocks, altered by fire, and Lavas, have a peculiar vitreous appearance, and may generally be easily distinguished; it frequently occurs that great varieties of crystallized substances are imbedded in them.

THE END.

BARNARD AND FARLEY,
Skinner-Street, London.